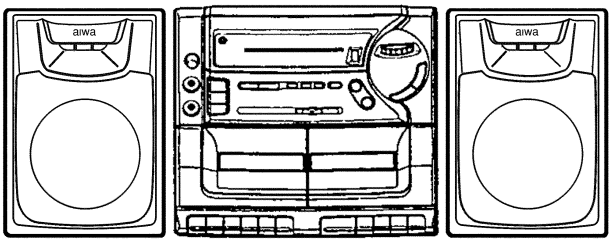
aiwa
SERVICE

CA-DW238 LH(S)
CA-DW248 U(S)
CA-DW258 LH(S)



SERVICE MANUAL

COMPACT DISC CARRY
COMPONENT SYSTEM

BASIC TAPE MECHANISM : ZZM-2 APR3NC
BASIC CD MECHANISM : DA11T3C

aiwa

S/M Code No. 09-012-354-1N1

DATA

SPECIFICATIONS

Tuner section
Frequency range, antenna — FM: 87.5 - 108.0 MHz
Rod antenna, AM: 530 - 1,710 kHz Ferrite bar antenna

Deck section
Track format — 4 tracks, 2 channels / Frequency range — Normal tape: 50 - 12,000 Hz (EIAJ) / Recording system — AC bias / Erasing system — Magnet erase / Heads — Deck 1: Recording/playback head (1), Erasure head (1); Deck 2: Playback head (1)

CD player section
Disc — Compact disc / Scanning method — Non-contact optical scanner (semiconductor laser) / Rotation speed — Approx. 500 - 200 rpm/CLV / Error correction — Cross interleave, Reed, Solomon code / Number of channels — 2 channels / D/A conversion — 1 bit DAC

General (238, 258 MODEL)
Power requirements — DC 12 V using eight size D (R20) batteries, AC 110-120 V/ 220-240 V switchable, 50/60 Hz / Dimensions (W × H × D) — 274 × 245 × 213 mm / Weight — 3.2 kg (excluding batteries)
Power output — 4 5 W + 4 5 W (3 2 ohms, EIAJ DC), 3 3 W + 3.3 W (DIN 1% Rated Power) / Power consumption — 27 W

General (248 MODEL)
Power requirements — DC 12 V using eight size D (R20) batteries, AC 120 V, 60 Hz / Dimensions (W × H × D) — 274 × 245 × 213 mm ($10\frac{7}{8} \times 9\frac{3}{4} \times 8\frac{1}{2}$ in.) / Weight — 3.0 kg (6 lb 10 oz.) (excluding batteries) / Power output — 2.5 W + 2.5 W (7 ohms, EIAJ DC) / Power consumption — 18 W

Speaker (238, 258 MODEL)
Type — 120 mm cone type / Dimensions (W × H × D) — 160 × 236 × 170 mm / Weight — Approx. 0.9 kg × 2
Impedance — 3.2 ohms / Allowable max. input — 7.0 W

Speaker (248 MODEL)
Type — 120 mm cone type / Dimensions (W × H × D) — 160 × 236 × 170 mm ($6\frac{3}{8} \times 9\frac{3}{8} \times 6\frac{3}{4}$ in.) / Weight — Approx. 0.9 kg (2 lb) × 2 / Impedance — 7 ohms / Allowable max. input — 5 W

- Design and specifications are subject to change without notice.

ACCESSORIES/PACKAGE LIST-1/1

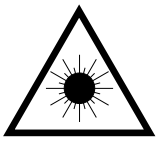
REF. NO		PART NO.	KANRI NO.	DESCRIPTION
	1	8B-CTA-902-010		IB,LH(ESP)FM<238LHSC>
	1	8B-CTA-902-010		IB,LH(ESP)FM<258LHSC>
	1	8B-CTA-903-010		IB,U(ESF)FM<248USC>
	2	8A-CLB-963-010		RC UNIT,RC-AAT25<258LHSC,248USC>
⚠	3	87-A80-036-010		AC CORD SET ASSY,E W/FLTR VOL<258LHSC>
⚠	3	87-A80-081-010		AC CORD SET ASSY,EZ BLK<238LHSC>
⚠	3	87-A80-109-010		AC CORD,HK7281 BLK U<248USC>
⚠	4	87-A91-017-010		PLUG,CONVERSION JT-0476<258LHSC>
⚠	4	87-A91-017-010		PLUG,CONVERSION JT-0476<238LHSC>

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

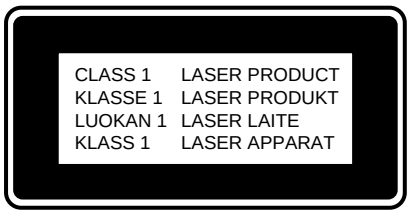
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

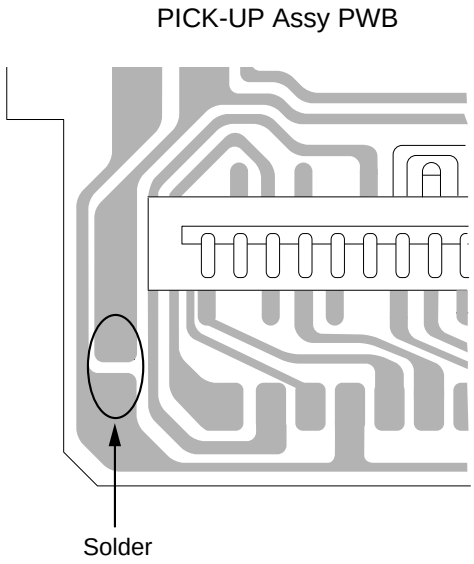
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



Precaution to replace Optical block (SF-P101NR)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.



ELECTRICAL MAIN PARTS LIST-1/4

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-955-010		IC,LA1828
	87-A21-090-010		IC,LA4600
	87-A21-520-040		C-IC,M61509FP<258LHSC,248USC>
	87-A21-443-040		C-IC,M62495AFP<238LHSC>
	87-020-828-010		IC,BA3416BL
	87-001-440-010		IC,BA15218N
	87-A20-446-010		C-IC,LA9241ML
	87-A21-319-010		C-IC,LC78622NE
	87-A21-093-010		IC,LA6541D
	8B-CTA-611-010		C-IC,LC865516A-5T71
	87-A20-650-010		IC,RPM6938-V11
TRANSISTOR			
	89-327-143-080		TR,2SC2714 (0.1W)
	87-026-462-080		TR,2SC1740 S(RS 0.3W)
	87-026-463-080		TR,2SA933S (0.3W)
	87-026-213-080		CHIP-TR,DTC114YK
	89-318-154-080		TR,2SC1815 (0.4W)
	89-320-011-080		TR,2SC2001 (15W)
	87-026-291-080		TR,DTC124XS
	89-109-332-380		TR,2SA933RS
	87-A30-515-080		TR,2SA1979O/Y
	87-A30-287-040		C-TR,DTC114TKA
	87-A30-435-040		C-TR,DTC144EK T146
	89-112-965-080		TR,2SA1296 (0.75W)
	87-A30-226-010		TR,2SB1655E
	87-026-464-010		TR,DTC114TS
	87-026-291-010		TR,DTC124XS
	87-026-463-010		TR,2SA933S,RS
	87-026-610-080		TR,KTC3198GR
	89-322-405-080		TR,2SC2240GR
DIODE			
	87-070-345-080		DIODE,IN4148
	87-A40-916-040		C-VARI-CAP,HVC202A
	87-027-399-080		ZENNER,HZ7A3L
	87-A40-466-080		ZENER,MTZJ2.7A
	87-A40-648-080		ZENER,MTZJ8.2A
	87-027-702-08J		ZENNER,HZ6C2L
	87-A40-465-090		DIODE,FR202
MAIN C.B			
C1	87-010-314-080		C-CAP,S 22P-50V
C2	87-010-316-080		C-CAP,S 33P-50 CH
C3	87-010-314-080		C-CAP,S 22P-50V
C4	87-010-146-080		C-CAP, 2P-50 C CH GRM
C5	87-010-378-080		CAP, ELECT 10-16V
C7	87-012-156-080		C-CAP,S 220P-50 CH
C8	87-010-197-080		CAP, CHIP 0.01 DM
C9	87-010-154-080		C-CAP,S 10P-50 D CH GRM
C10	87-010-197-080		CAP, CHIP 0.01 DM
C11	87-010-151-080		C-CAP,S 7P-50 D CH GRM
C12	87-010-314-080		C-CAP,S 22P-50V
C13	87-010-148-080		CAP,S 4P/50
C14	87-010-196-080		CHIP CAPACITOR,0.1-25
C16	87-010-178-080		CHIP CAP 1000P
C17	87-016-669-080		C-CAP,S 0.1-25 K B
C18	87-010-197-080		CAP, CHIP 0.01 DM
C19	87-016-669-080		C-CAP,S 0.1-25 K B
C20	87-010-400-080		CAP, ELECT 0.47-50V
C21	87-010-403-080		CAP, ELECT 3.3-50V
C22	87-010-197-080		CAP, CHIP 0.01 DM
C24	87-010-784-080		C-CAP,U 0.012-25 B
C25	87-010-784-080		C-CAP,U 0.012-25 B
C26	87-A11-729-080		C-CAP,S 0.47-25 Z F
C27	87-A11-729-080		C-CAP,S 0.47-25 Z F
C28	87-010-992-080		C-CAP,S 0.047-25 B
C29	87-010-992-080		C-CAP,S 0.047-25 B
C30	87-010-248-080		CAP, ELECT 220-10V
C31	87-010-379-080		CAP, ELECT 22-16V
C32	87-010-197-080		CAP, CHIP 0.01 DM
C33	87-010-197-080		CAP, CHIP 0.01 DM
C34	87-010-197-080		CAP, CHIP 0.01 DM
C35	87-010-197-080		CAP, CHIP 0.01 DM
C36	87-010-263-080		CAP, ELECT 100-10V
C38	87-010-322-080		C-CAP,S 100P-50 CH
C39	87-010-197-080		CAP, CHIP 0.01 DM
C56	87-010-151-080		C-CAP,S 7P-50 D CH GRM
C91	87-010-197-080		CAP, CHIP 0.01 DM
C92	87-010-197-080		CAP, CHIP 0.01 DM
C211	87-010-805-080		CAP, S 1-16
C212	87-010-805-080		CAP, S 1-16
C215	87-010-425-080		C-CAP,S 0.22-25 Z F
C216	87-010-425-080		C-CAP,S 0.22-25 Z F
C231	87-015-632-080		C-CAP,0.015-50 B
C232	87-015-632-080		C-CAP,0.015-50 B
C233	87-A10-201-080		C-CAP,S 0.33-16 K B
C234	87-A10-201-080		C-CAP,S 0.33-16 K B
C235	87-015-785-080		CHIP CAPACITOR, 0.1FZ-25Z
C236	87-015-785-080		CHIP CAPACITOR, 0.1FZ-25Z
C237	87-010-374-080		CAP, ELECT 47-10V
C238	87-010-221-080		CAP, ELECT 470-10V
C239	87-010-805-080		CAP, S 1-16<238LHSC>
C239	87-010-197-080		CAP, CHIP 0.01 DM<258LHSC,248USC>
C240	87-010-805-080		CAP, S 1-16<238LHSC>
C240	87-010-197-080		CAP, CHIP 0.01 DM<258LHSC,248USC>
C243	87-010-401-080		CAP, ELECT 1-50V
C244	87-010-401-080		CAP, ELECT 1-50V
C245	87-010-401-080		CAP, ELECT 1-50V
C246	87-010-401-080		CAP, ELECT 1-50V
C247	87-010-401-080		CAP, ELECT 1-50V
C248	87-010-401-080		CAP, ELECT 1-50V
C251	87-010-404-080		CAP, ELECT 4.7-50V
C261	87-010-402-080		CAP, ELECT 2.2-50V
C262	87-010-402-080		CAP, ELECT 2.2-50V
C263	87-010-178-080		CHIP CAP 1000P
C264	87-010-178-080		CHIP CAP 1000P
C266	87-010-545-080		CAP, ELECT 0.22-50V
C267	87-010-545-080		CAP, ELECT 0.22-50V
C271	87-010-235-080		C-CAP,E 470-16 M SME<248USC>
C271	87-010-237-080		CAP, ELECT 1000-16V<EXCEPT 248USC>
C272	87-010-235-080		C-CAP,E 470-16 M SME<248USC>
C272	87-010-237-080		CAP, ELECT 1000-16V<EXCEPT 248USC>
C277	87-010-404-080		CAP, ELECT 4.7-50V
C278	87-010-263-080		CAP, ELECT 100-10V
C279	87-016-628-080		CAP,E 10-25 M SEL
C280	87-010-178-080		CHIP CAP 1000P
C281	87-010-178-080		CHIP CAP 1000P
C285	87-010-178-080		CHIP CAP 1000P
C287	87-010-178-080		CHIP CAP 1000P
C288	87-010-178-080		CHIP CAP 1000P
C292	87-010-404-080		CAP, ELECT 4.7-50V
C293	87-010-404-080		CAP, ELECT 4.7-50V
C299	87-010-196-080		CHIP CAPACITOR,0.1-25
C301	87-010-175-080		CAP 560P
C302	87-010-175-080		CAP 560P
C303	87-010-177-080		C-CAP,S 820P-50 SL
C304	87-010-177-080		C-CAP,S 820P-50 SL
C305	87-010-374-080		CAP, ELECT 47-10V
C306	87-010-374-080		CAP, ELECT 47-10V
C307	87-010-382-080		CAP, ELECT 22-25V
C308	87-010-405-080		CAP, ELECT 10-50V
C309	87-010-404-080		CAP, ELECT 4.7-50V
C310	87-010-404-080		CAP, ELECT 4.7-50V
C311	87-010-248-080		CAP, ELECT 220-10V

ELECTRICAL MAIN PARTS LIST-2/4

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C312	87-010-374-080		CAP, ELECT 47-10V
C313	87-015-828-080		C-CAP,0.033 F
C314	87-015-828-080		C-CAP,0.033 F
C315	87-010-401-080		CAP, ELECT 1-50V
C316	87-010-401-080		CAP, ELECT 1-50V
C317	87-010-382-080		CAP, ELECT 22-25V
C320	87-010-405-080		CAP, ELECT 10-50V
C321	87-012-157-080		C-CAP,S 330P-50 CH
C322	87-012-157-080		C-CAP,S 330P-50 CH
C323	87-010-197-080		CAP, CHIP 0.01 DM
C324	87-010-197-080		CAP, CHIP 0.01 DM
C325	87-010-180-080		C-CER 1500P
C326	87-010-180-080		C-CER 1500P
C327	87-010-404-080		CAP, ELECT 4.7-50V
C328	87-010-178-080		C-CAP,S 1000P-50 K B C2012
C329	87-010-182-080		C-CAP,S 2200P-50 B
C330	87-010-213-080		C-CAP,S 0.015-25 K B GRM
C331	87-010-374-080		CAP, ELECT 47-10V
C334	87-012-155-080		C-CAP 180P-50CH
C341	87-012-157-080		C-CAP,S 330P-50 CH
C342	87-012-157-080		C-CAP,S 330P-50 CH
C343	87-012-157-080		C-CAP,S 330P-50 CH
C344	87-010-303-080		C-CAP, 330P-50 J CH
C350	87-010-992-080		C-CAP,S 0.047-25 B
C501	87-010-390-010		CAP,E 3300-25 SME
C506	87-010-404-080		CAP, ELECT 4.7-50V
C507	87-010-401-080		CAP, ELECT 1-50V
C508	87-010-235-080		C-CAP,E 470-16 M SME
C509	87-A11-149-080		CAP,TC U 0.22-50 Z F
C511	87-010-383-080		CAP,E 33-25 M 11L SME
C512	87-010-385-080		CAP, ELECT 220-25V
C520	87-A11-566-080		C-CAP,S 0.01-25 K B
C521	87-A11-566-080		C-CAP,S 0.01-25 K B
C522	87-010-112-810		CAP,E 100-16 M SME
C544	87-010-405-080		CAP, ELECT 10-50V
C762	87-010-198-080		CAP, CHIP 0.022
C765	87-010-196-080		CHIP CAPACITOR,0.1-25
C766	87-010-260-080		CAP, ELECT 47-25V
C767	87-010-384-080		CAP,E 100-25 M 11L SME
CF1	87-A90-128-010		FLTR,AM IF CFAL-455
CF2	87-008-261-08C		FRTR,CF SFE10.7MAS5
CF3	87-008-261-08C		FRTR,CF SFE10.7MAS5
CN301	8B-CT5-616-010		CONN ASSY,4P 2791 30AWG PH<238LHSC>
CN302	8B-CT5-617-010		CONN ASSY,5P 2791 30AWG PH<238LHSC>
CN501	87-049-919-010		CONN,3P EH V WHT
CN601	87-A60-109-010		CONN,2P V S2M-2W
CN751	8B-CT5-618-010		CONN ASSY,8P 1007 26AWG PH<238LHSC>
CON201	87-A60-202-010		TERMINAL,ANT 4P MSP-54V-02
L2	87-A50-560-010		COIL,FM BPF(ACD)
L3	8A-CD9-660-010		BAR-ANT,MW 2B-ACD(COI)
L4	87-A50-562-010		COIL,FM RF EX(ACD)
L5	87-A50-564-010		COIL,FM OSC EX(ACD)
L6	87-A50-588-010		COIL,AM OSC-ACD(COI)
L7	87-A50-579-010		COIL,AM IFT(ACD)
L8	87-A50-590-010		COIL,FM IFT-ACD(COI)
L9	87-A50-577-010		COIL,FM DET(ACD)
L10	87-005-849-080		COIL,10UH(CECS)
L16	87-A50-588-010		COIL,AM-OSC-ACD(C01)
L330	88-CT6-620-010		REC OSC
L615	87-005-849-080		COIL,10UH(CECS)
PN301	87-A60-110-010		CONN,4P V S2M-4W
PN302	87-A60-111-010		CONN,5P V S2M 5W
PN751	87-099-832-010		CONN,8P S2M-8W
PVC1	87-A91-316-010		TUN-CAP,20P-160P U(TWD)
R761	87-029-019-010		RES, FUSEIBLE 1/2W-2.2
SFR761	87-024-272-010		SFR,10K V RH0632C
SW1	87-A91-548-010		SW,SL-2-3 SK23E01G06
SW301	88-CT6-619-010		BACK SLIDE SW 6P2T SHORTIN

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
CD C.B			
C401	87-010-403-080		CAP, ELECT 3.3-50V
C402	87-010-197-080		CAP, CHIP 0.01 DM
C403	87-010-263-080		CAP, ELECT 100-10V
C404	87-010-248-080		CAP, ELECT 220-10V
C405	87-010-197-080		CAP, CHIP 0.01 DM
C406	87-010-374-080		CAP, ELECT 47-10V
C407	87-010-178-080		CHIP CAP 1000P
C408	87-010-198-080		CAP, CHIP 0.022
C409	87-010-248-080		CAP, ELECT 220-10V
C410	87-010-263-080		CAP, ELECT 100-10V
C411	87-A11-693-080		C-CAP,S 0.15-50 M F
C412	87-010-401-080		CAP, ELECT 1-50V
C413	87-016-369-080		C-CAP,S 0.033-25 B K
C414	87-010-401-080		CAP, ELECT 1-50V
C416	87-010-545-080		CAP, ELECT 0.22-50V
C417	87-012-157-080		C-CAP,S 330P-50 CH
C418	87-010-213-080		C-CAP,S 0.015-25 K B GRM
C419	87-A11-608-080		C-CAP,S 0.33-25 K B
C420	87-016-369-080		C-CAP,S 0.033-25 B K
C421	87-A11-693-080		C-CAP,S 0.15-50 M F
C422	87-010-184-080		CHIP CAPACITOR 3300P(K)
C423	87-010-992-080		C-CAP,S 0.047-25 B
C424	87-016-460-080		C-CAP,S 0.22-16 K B
C425	87-010-176-080		C-CAP,S 680P-50 SL
C426	87-A11-608-080		C-CAP,S 0.33-25 K B
C428	87-010-197-080		CAP, CHIP 0.01 DM
C429	87-010-186-080		CAP,CHIP 4700P
C430	87-012-156-080		C-CAP,S 220P-50 CH
C431	87-010-545-080		CAP, ELECT 0.22-50V
C432	87-010-374-080		CAP, ELECT 47-10V
C433	87-010-401-080		CAP, ELECT 1-50V
C434	87-010-184-080		CHIP CAPACITOR 3300P(K)
C435	87-010-197-080		CAP, CHIP 0.01 DM
C436	87-010-374-080		CAP, ELECT 47-10V
C437	87-010-404-080		CAP, ELECT 4.7-50V
C438	87-016-669-080		C-CAP,S 0.1-25 K B
C439	87-010-178-080		CHIP CAP 1000P
C440	87-010-145-080		C-CAP,S 1P-50 CH
C441	87-010-197-080		CAP, CHIP 0.01 DM
C442	87-010-314-080		C-CAP,S 22P-50V
C445	87-010-196-080		CHIP CAPACITOR,0.1-25
C446	87-010-196-080		CHIP CAPACITOR,0.1-25
C447	87-010-196-080		CHIP CAPACITOR,0.1-25
C448	87-010-315-080		C-CAP,S 27P-50 CH
C450	87-010-305-080		C-CAP 470P-50CH
C451	87-012-156-080		C-CAP,S 220P-50 CH
C455	87-010-247-080		CAP, ELECT 100-50V
C457	87-010-312-080		C-CAP,S 15P-50 CH
C458	87-010-312-080		C-CAP,S 15P-50 CH
C459	87-010-263-080		CAP, ELECT 100-10V
C460	87-015-819-080		CAPACITOR,0.01
C461	87-010-197-080		CAP, CHIP 0.01 DM
C462	87-010-248-080		CAP, ELECT 220-10V
C463	87-010-197-080		CAP, CHIP 0.01 DM
C465	87-010-404-080		CAP, ELECT 4.7-50V
C466	87-010-196-080		CHIP CAPACITOR,0.1-25
C467	87-010-263-080		CAP, ELECT 100-10V
C469	87-012-154-080		C-CAP,S 150P-50 CH
C470	87-010-544-080		CAP, ELECT 0.1-50V
C471	87-A11-601-080		C-CAP,S 0.1-25 K B
C472	87-A11-601-080		C-CAP,S 0.1-25 K B
C473	87-A11-601-080		C-CAP,S 0.1-25 K B
C474	87-A11-601-080		C-CAP,S 0.1-25 K B
C475	87-010-197-080		CAP, CHIP 0.01 DM
C476	87-010-236-080		CAP,E 1000-10 SME
C477	87-010-197-080		CAP, CHIP 0.01 DM
C478	87-010-263-080		CAP, ELECT 100-10V
C479	87-010-197-080		CAP, CHIP 0.01 DM

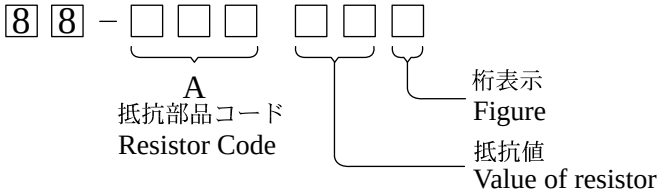
ELECTRICAL MAIN PARTS LIST-3/4

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C480	87-010-221-080		CAP, ELECT 470-10V
C481	87-010-405-080		CAP, ELECT 10-50V
C482	87-010-405-080		CAP, ELECT 10-50V
C489	87-010-196-080		CHIP CAPACITOR,0.1-25
C490	87-010-196-080		CHIP CAPACITOR,0.1-25
C491	87-015-819-080		CAPACITOR,0.01
C492	87-010-221-080		CAP, ELECT 470-10V
C493	87-010-197-080		CAP, CHIP 0.01 DM
C494	87-010-197-080		CAP, CHIP 0.01 DM
C4001	87-010-196-080		CHIP CAPACITOR,0.1-25
C4002	87-010-322-080		C-CAP,S 100P-50 CH
C4003	87-010-322-080		C-CAP,S 100P-50 CH
C4004	87-010-322-080		C-CAP,S 100P-50 CH
C4005	87-010-322-080		C-CAP,S 100P-50 CH
C4006	87-010-322-080		C-CAP,S 100P-50 CH
C4007	87-010-178-080		CHIP CAP 1000P
C4010	87-018-209-08C		CAP,TC U 0.1-50 Z F UP 050
C4011	87-010-178-080		CHIP CAP 1000P
C4012	87-010-178-080		CHIP CAP 1000P
C4013	87-010-178-080		CHIP CAP 1000P
CN401	87-A60-424-010		CONN,16P V TOC-B
CNA402	8Z-CT6-631-010		CONN ASSY,6P CD MO
FFC401	8B-CTA-616-010		FF-CABLE,16P 1.0 165MM<238LHSC>
L401	87-005-849-080		COIL,10UH(CECS)
L402	87-005-849-080		COIL,10UH(CECS)
L404	87-003-152-080		COIL, 100UH
L405	87-005-849-080		COIL,10UH(CECS)
L406	87-008-372-080		FLTR,EMI BL 01RN1
SFR430	87-024-437-080		SFR100K,RH063EC
X401	8Z-CD5-633-010		VIB, CER16.93MHZ FCR16.93M2
FRONT C.B			
C601	87-010-313-080		CAP, CHIP 18P
C602	87-010-315-080		C-CAP,S 27P-50 CH
C603	87-010-319-080		C-CAP,S 56P-50 CH
C604	87-010-317-080		C-CAP,S 39P-50 CH
C605	87-010-263-080		CAP, ELECT 100-10V
C606	87-010-196-080		CHIP CAPACITOR,0.1-25
C607	87-010-197-080		CAP, CHIP 0.01 DM
C608	87-010-405-080		CAP, ELECT 10-50V
C609	87-010-400-080		CAP, ELECT 0.47-50V
C611	87-010-248-080		CAP, ELECT 220-10V
C613	87-010-196-080		CHIP CAPACITOR,0.1-25
C614	87-010-312-080		C-CAP,S 15P-50 CH
C615	87-010-805-080		CAP, S 1-16
C616	87-010-805-080		CAP, S 1-16
C617	87-010-179-080		CAP,CHIP S B1200P
C618	87-010-263-080		CAP, ELECT 100-10V
C619	87-010-401-080		CAP, ELECT 1-50V
C630	87-A11-566-080		C-CAP,S 0.01-25 K B
C631	87-A11-566-080		C-CAP,S 0.01-25 K B
C632	87-A11-566-080		C-CAP,S 0.01-25 K B
C633	87-A11-566-080		C-CAP,S 0.01-25 K B
C638	87-A11-566-080		C-CAP,S 0.01-25 K B
C639	87-A11-566-080		C-CAP,S 0.01-25 K B
C640	87-A11-566-080		C-CAP,S 0.01-25 K B
C641	87-A11-601-080		C-CAP,S 0.1-25 K B
C642	87-010-197-080		CAP, CHIP 0.01 DM
C830	87-A11-566-080		C-CAP,S 0.01-25 K B
C831	87-A11-566-080		C-CAP,S 0.01-25 K B
C832	87-015-628-080		C-CAP,1800P-50 B
C833	87-010-178-080		CHIP CAP 1000P
C834	87-010-404-080		CAP, ELECT 4.7-50V
C835	87-010-544-080		CAP, ELECT 0.1-50V
C836	87-010-178-080		CHIP CAP 1000P
C837	87-010-178-080		CHIP CAP 1000P
C838	87-010-401-080		CAP, ELECT 1-50V
C840	87-010-221-080		CAP, ELECT 470-10V
C841	87-010-401-080		CAP, ELECT 1-50V
C842	87-012-140-080		CAP 470P
C844	87-010-401-080		CAP, ELECT 1-50V
J251	88-CT6-625-010		JACK,MIC
J801	88-CT6-625-010		JACK,MIC
L601	87-003-102-080		COIL, 10UH
L612	87-005-849-080		COIL,10UH(CECS)
L616	87-005-849-080		COIL,10UH(CECS)
L617	87-005-849-080		COIL,10UH(CECS)
L618	87-005-849-080		COIL,10UH(CECS)
L801	87-003-098-080		COIL,2.2UH
LED602	87-A41-050-040		LED,BT-H203D-31 RED
LED603	87-A41-050-040		LED,BT-H203D-31 RED
LED606	87-A41-050-040		LED,BT-H203D-31 RED
LED607	87-A41-050-040		LED,BT-H203D-31 RED
LED608	87-A41-050-040		LED,BT-H203D-31 RED
LED610	87-A41-050-040		LED,BT-H203D-31 RED<258LHSC,248USC>
LED611	87-A41-066-010		LED,FR-12037G RED
SW601	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW602	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW603	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW604	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW605	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW606	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW607	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW608	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW611	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW614	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW615	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW616	8Z-CT6-636-010		SW,TACT EVQJAC04M
SW617	8Z-CT6-636-010		SW,TACT EVQJAC04M
VR801	87-A90-768-010		VR,RTRY 10KAX1 1 H
X601	87-030-273-010		VIB,XTAL 32.768K5PPM
X602	87-A70-070-080		VIB,CER 5.76MHZ CRHF
POWER C.B			
C901	87-A10-577-080		CAP,CER 0.022-50 Z YF
C902	87-A10-577-080		CAP,CER 0.022-50 Z YF
C903	87-A10-577-080		CAP,CER 0.022-50 Z YF
C904	87-A10-577-080		CAP,CER 0.022-50 Z YF
CNA901	8Z-CT9-640-010		CONN ASSY,3P EH(POWER)
⚠PR901	87-A90-764-080		PROTECTER,1.25A 60V 491<EXCEPT 248USC>
MOTOR C.B			
M2	S0-M10-A09-700		MOTOR SLED ASSY
PIN3	S2-369-750-000		PLUG,6P
SW1	S4-S13-A01-600		SW,LEAF

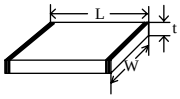
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

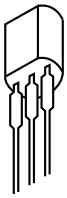
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code：A
1/16W	1005	±5%	CJ		1.0	0.5	0.35	104
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION-1/1

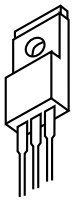


ECB

2SA1296

ECB

2SA1318

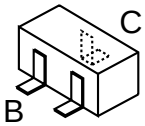


ECB

2SB1655

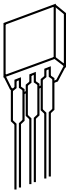
ECB

2SC2001
2SA933
2SC1815
2SC2240
KTC3198



E

2SC2714
DTC114YK
DTC114TK
DTC144EK

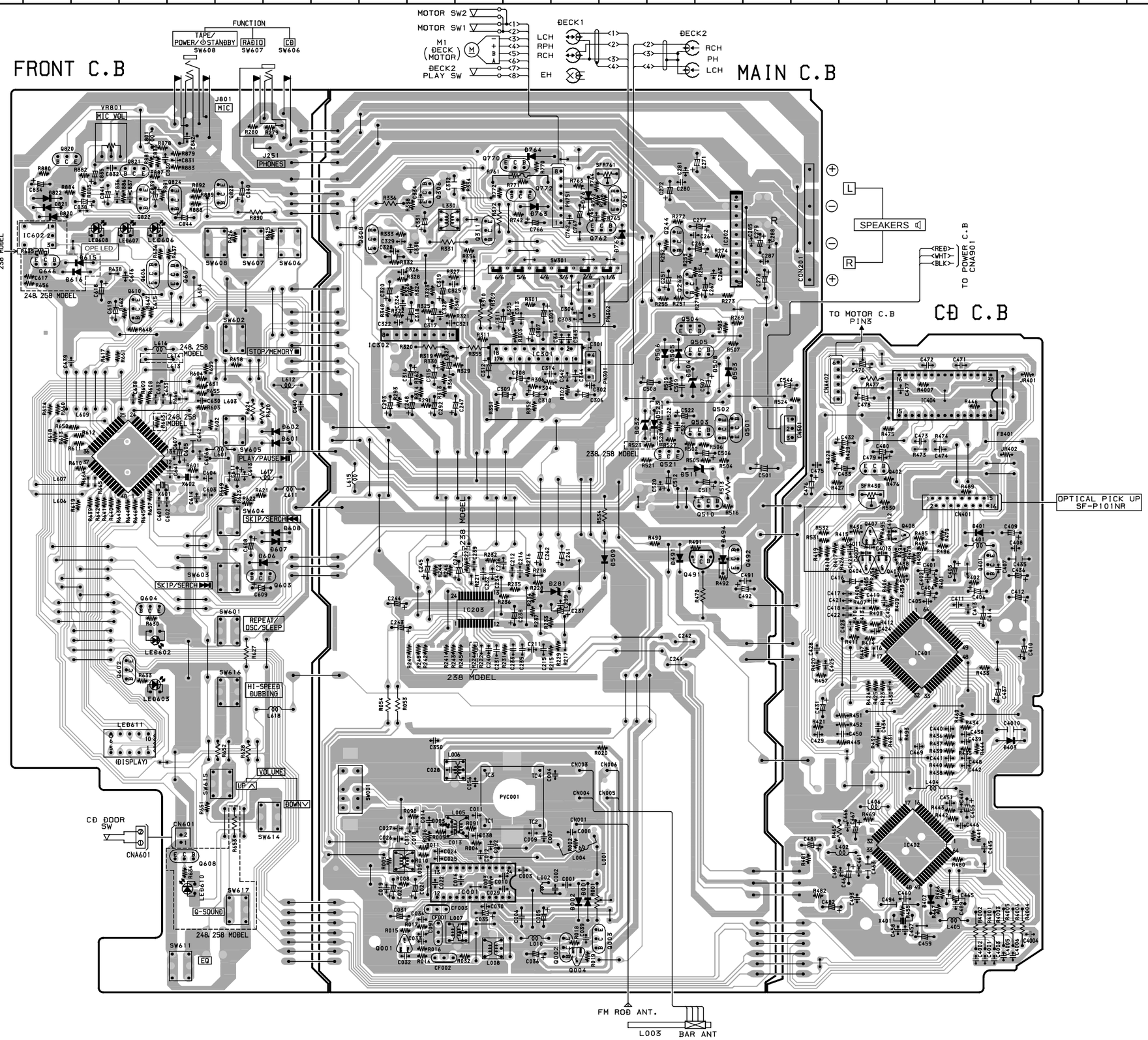


ECB

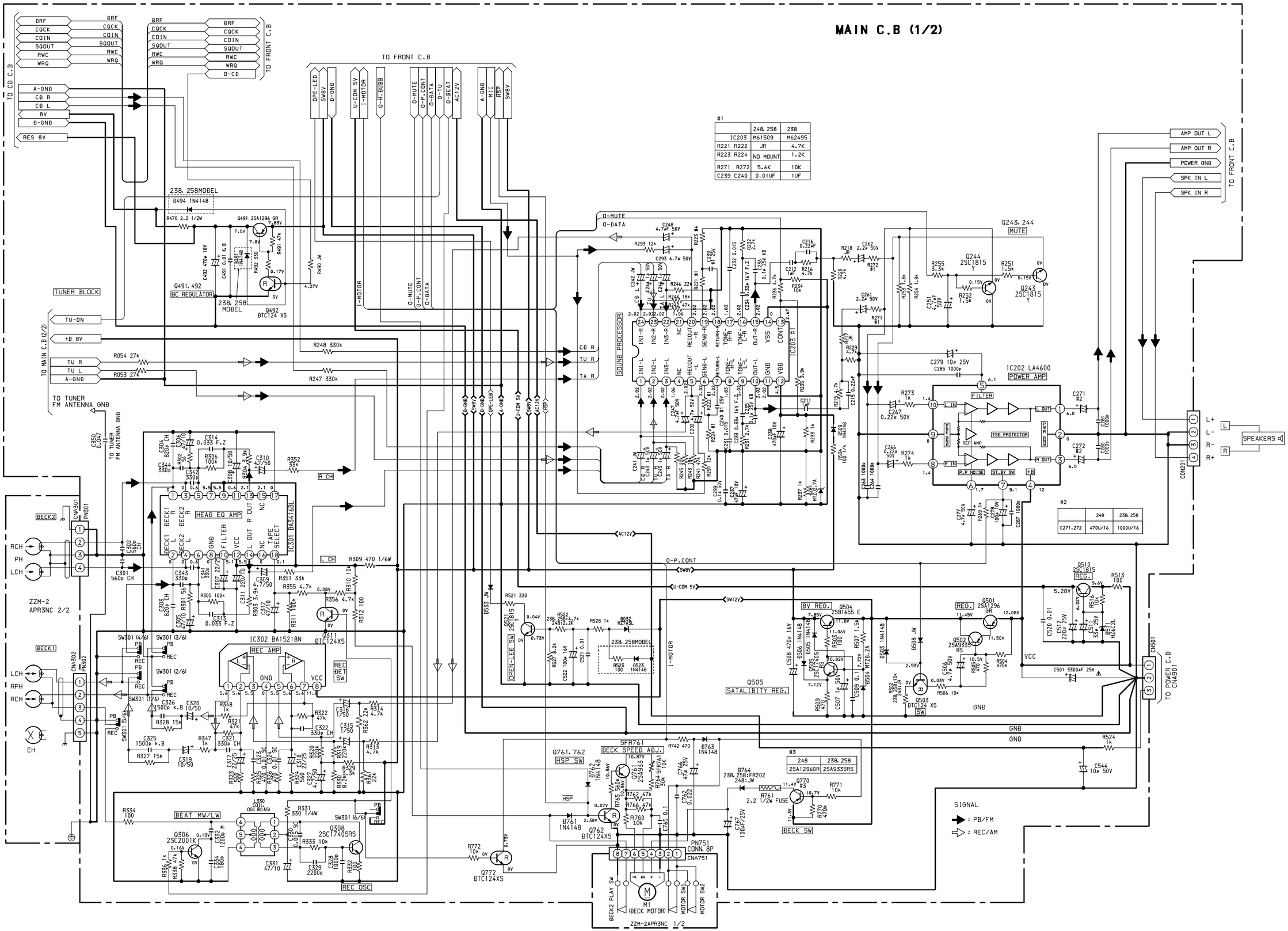
DTC114TS

ECB

DTC124XS
2SC1740


FRONT C.B
MAIN C.B
CD C.B
FUNCTION
TAPE/ POWER/ STANDBY
SW608
RADIO
SW607
CD
SW606
MOTOR SW2
MOTOR SW1
M1 (DECK MOTOR)
DECK2 PLAY SW
LCH
RPH
RCH
EH
DECK1
DECK2
RCH
PH
LCH
VR801
MIC VOL
J801
MIC
J251
PHONES
IC602
238 MODEL
248. 258 MODEL
OPE LED
LED608
LED607
LED606
SW608
SW607
SW606
SW602
STOP/MEMORY
SW605
PLAY/PAUSE
SW604
SKIP/SERCH
SW603
SKIP/SERCH
SW601
REPEAT/ OSC/SLEEP
LED602
SW616
HI-SPEED DUBBING
LED603
LED611
(DISPLAY)
VOLUME
UP
DOWN
SW615
SW614
CD DOOR SW
CN601
CNA601
Q608
LED610
SW617
Q-SOUND
SW611
EQ
IC302
IC203
IC301
SW301
PVC001
IC001
IC5
IC4
TC1
TC2
CN001
CN002
CN003
CN004
CN005
CN006
SW001
238 MODEL
SPEAKERS
L
R
TO POWER C.B CNA901
(RED)
(WHT)
(BLK)
CON201
TO MOTOR C.B PIN3
OPTICAL PICK UP SF-P101NR
CN401
IC401
IC402
IC404
CNA102
JR401
JR402
FB401
FM ROD ANT.
L003
BAR ANT

SCHEMATIC DIAGRAM-1/5 (MAIN 1/2)

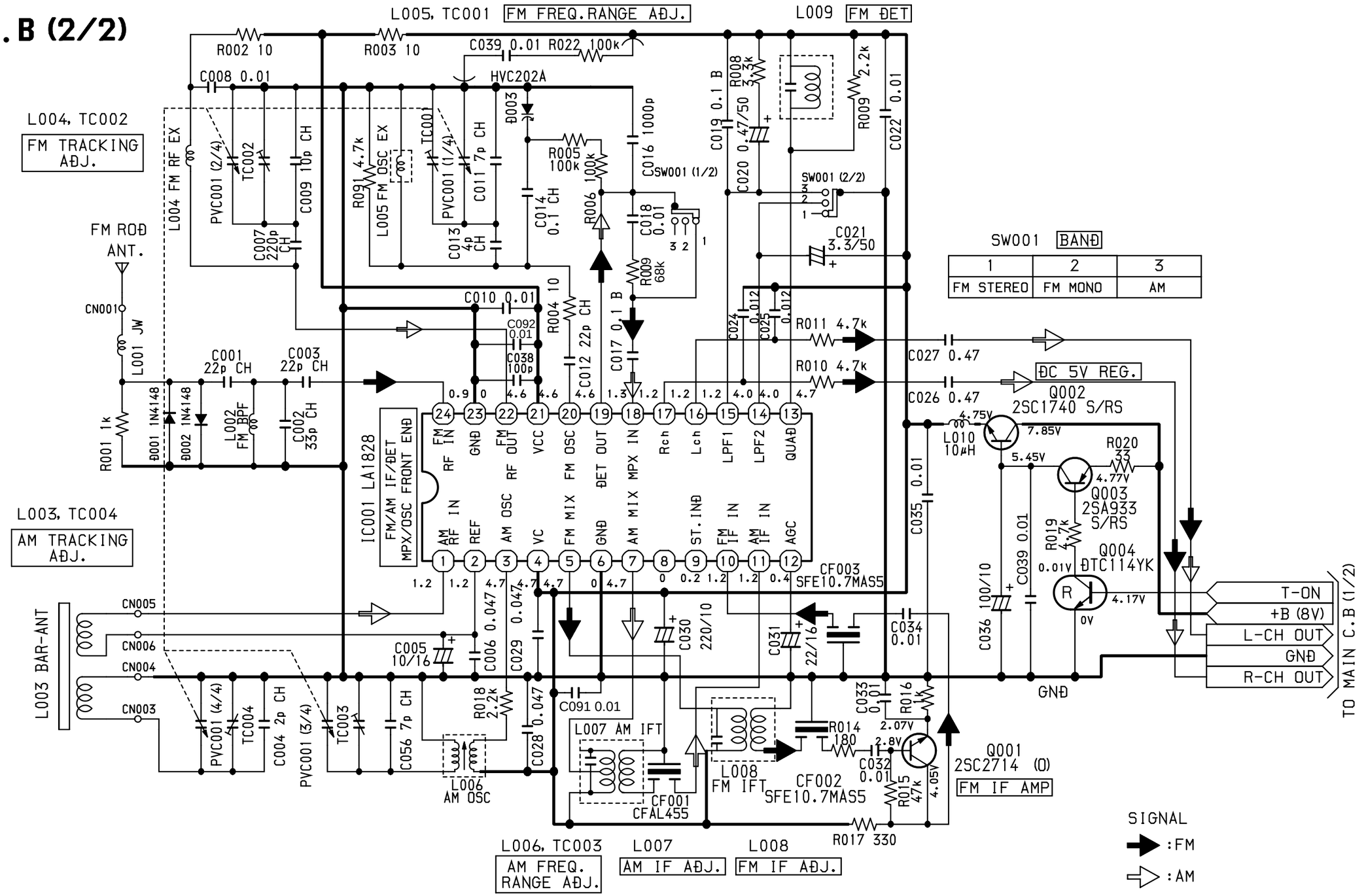


#1		248. 258	238
	IC203	M61509	M62495
R221	R222	JR	4.7K
R223	R224	NO MOUNT	1.2K
R271	R272	5.6K	10K
C239	C240	0.01UF	1UF

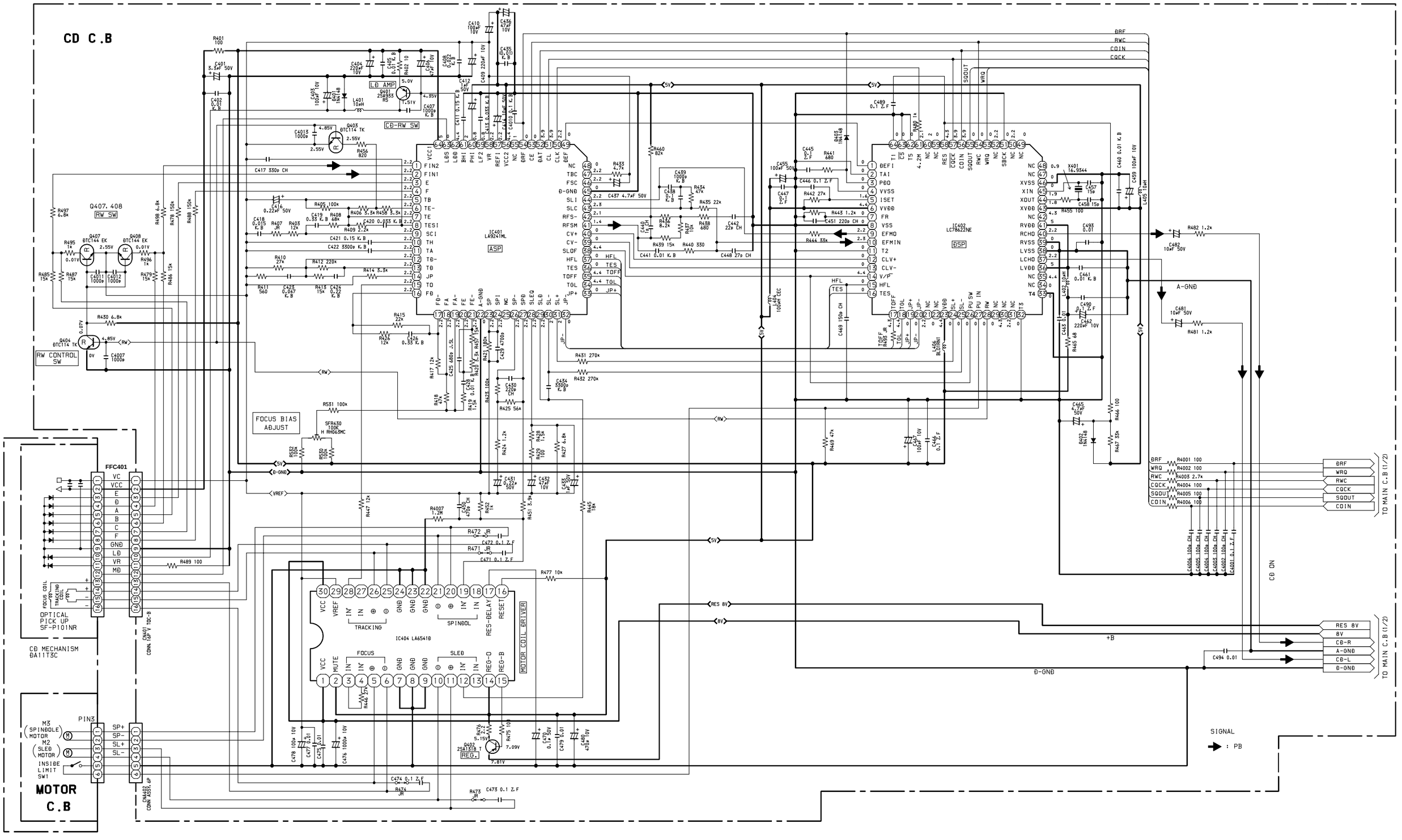
#2		248	238. 258
C271.272		470U/16	1000U/16

#3	248	238. 258
	2SA1296GR	2SA933SRS

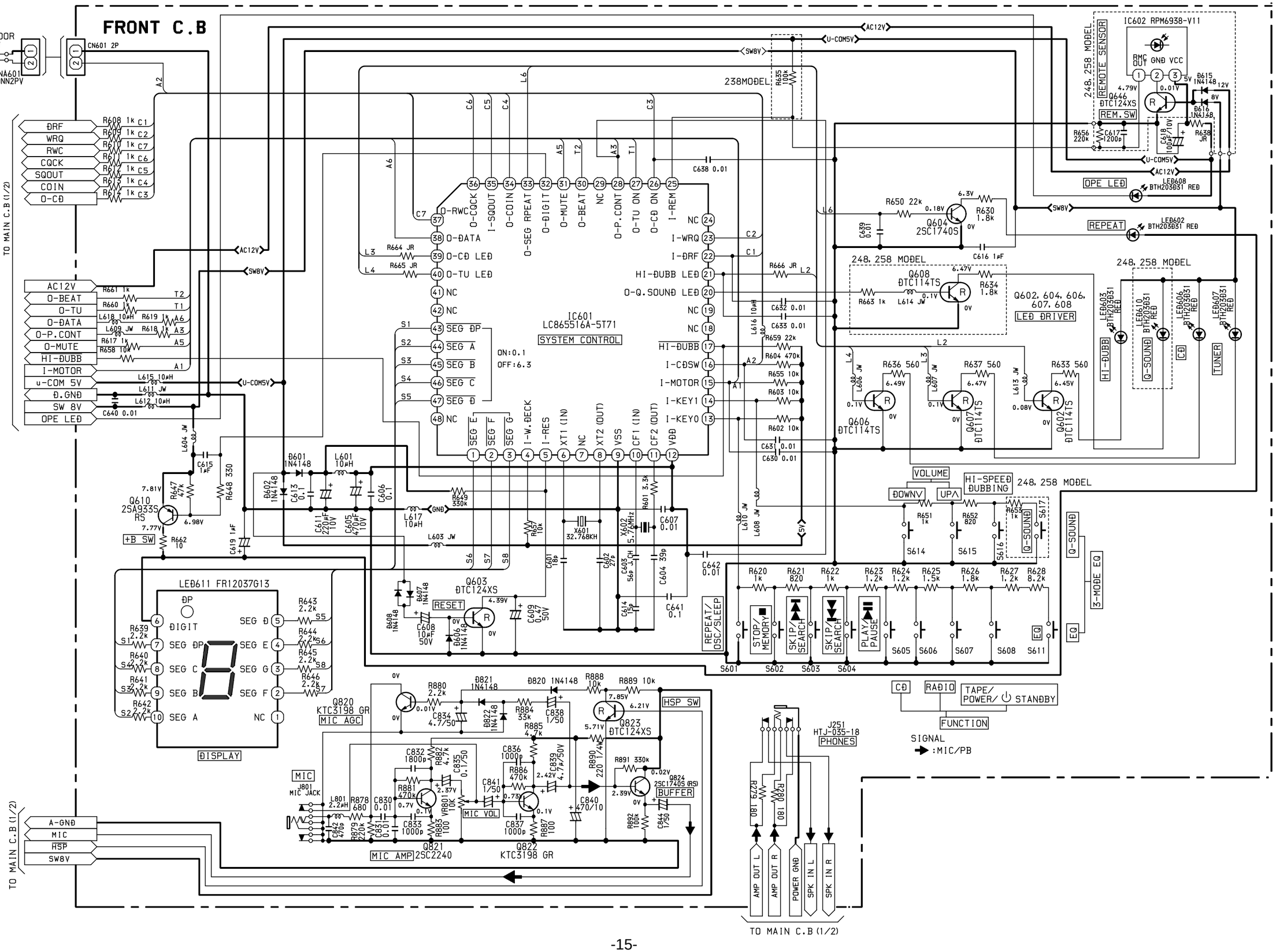
MAIN C.B (2/2)

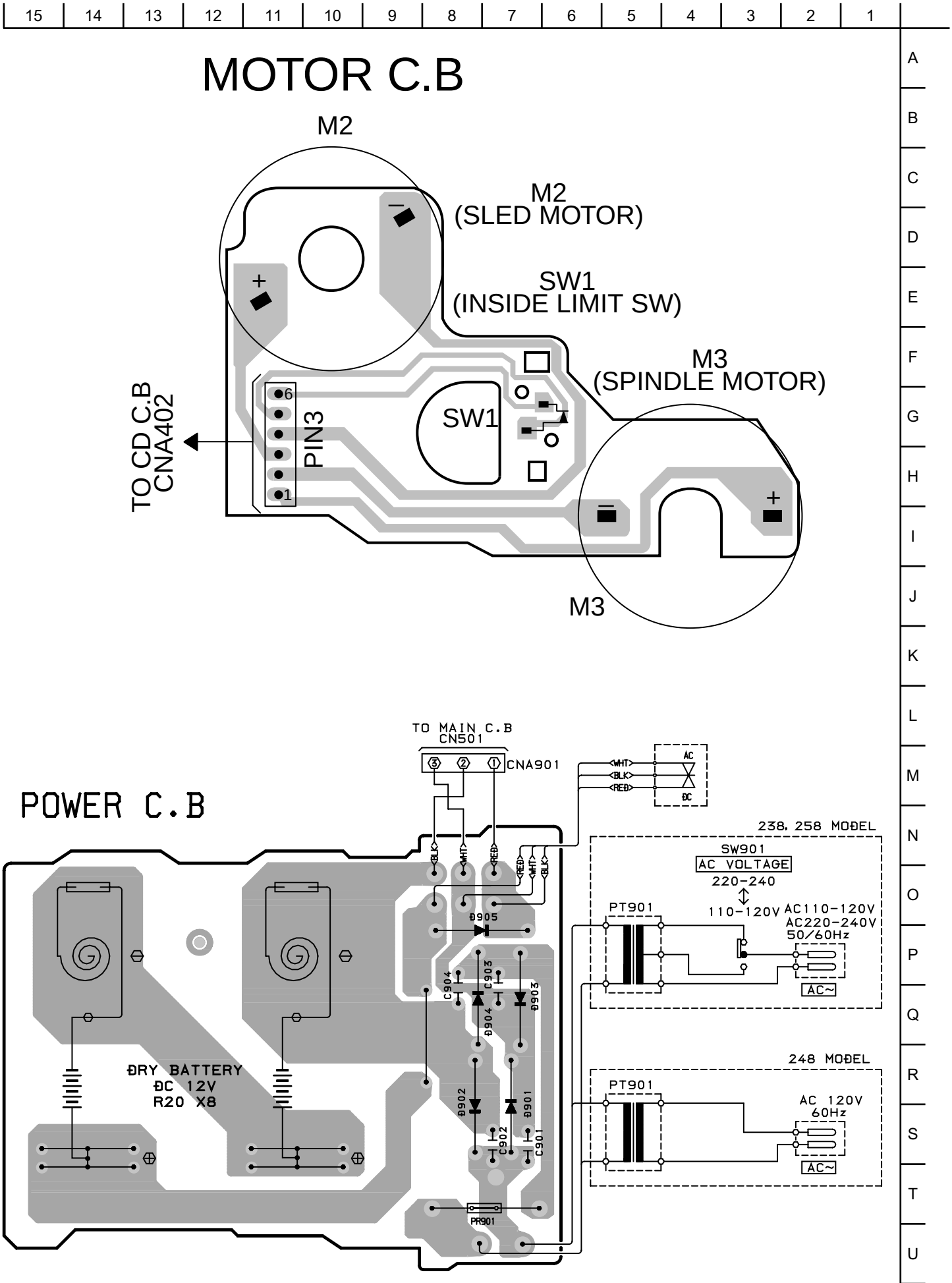

L005, TC001 FM FREQ.RANGE ADJ.
L009 FM DET
L004, TC002
FM TRACKING ADJ.
FM ROD ANT.
CN001
L001 JW
R001 1k
D001 1N4148
D002 1N4148
L002 FM BPF
C002 33p CH
C001 22p CH
C003 22p CH
L004 FM RF EX
PVC001 (2/4)
TC002
C007 220p CH
C009 10p CH
R002 10
R003 10
C008 0.01
C039 0.01
R022 100k
HVC202A
D003
R091 4.7k
L005 FM OSC EX
PVC001 (1/4)
TC001
C013 4p CH
C011 7p CH
C014 0.1 CH
R005 100k
R006 100k
C016 1000p
SW001 (1/2)
C018 0.01
R009 68k
C019 0.1 B
C020 0.47/50
R008 3.3k
R009 2.2k
C022 0.01
SW001 (2/2)
C021 3.3/50
C010 0.01
C092 0.01
C038 100p
R004 10
C012 22p CH
C017 0.1 B
C024 0.012
C025 0.012
R011 4.7k
R010 4.7k
C027 0.47
C026 0.47
ĐC 5V REG.
Q002
2SC1740 S/RS
4.75V
7.85V
L010 10μH
5.45V
R020 33
4.77V
Q003
2SA933
S/RS
R019 4.7k
0.01V
Q004
ĐTC114YK
4.17V
0V
C035 0.01
C036 100/10
C039 0.01
SW001 BAND
1 FM STEREO
2 FM MONO
3 AM
IC001 LA1828
FM/AM IF/ĐET FRONT END
MPX/OSC
RF IN
GNĐ
FM OUT
VCC
FM OSC
ĐET OUT
MPX IN
Rch
Lch
LPF1
LPF2
QUAĐ
AM RF IN
REF
AM OSC
VC
FM MIX
GNĐ
AM MIX
ST. INĐ
FM IF IN
AM IF IN
AGC
CF003 SFE10.7MAS5
L003, TC004
AM TRACKING ADJ.
L003 BAR-ANT
CN005
CN006
CN004
CN003
C005 10/16
C006 0.047
C029 0.047
C030 220/10
C031 22/16
C034 0.01
C033 0.01
R016 1k
2.07V
2.8V
R014 180
C032 0.01
R015 47k
4.05V
Q001
2SC2714 (O)
FM IF AMP
PVC001 (4/4)
TC004
C004 2p CH
PVC001 (3/4)
TC003
C056 7p CH
L006 AM OSC
R018 2.2k
C028 0.047
C091 0.01
L007 AM IFT
CF001 CFAL455
L008 FM IFT
CF002 SFE10.7MAS5
R017 330
GNĐ
T-ON
+B (8V)
L-CH OUT
GNĐ
R-CH OUT
TO MAIN C.B (1/2)
L006, TC003 AM FREQ. RANGE ADJ.
L007 AM IF ADJ.
L008 FM IF ADJ.
SIGNAL
:FM
:AM

SCHEMATIC DIAGRAM-3/5 (CD)

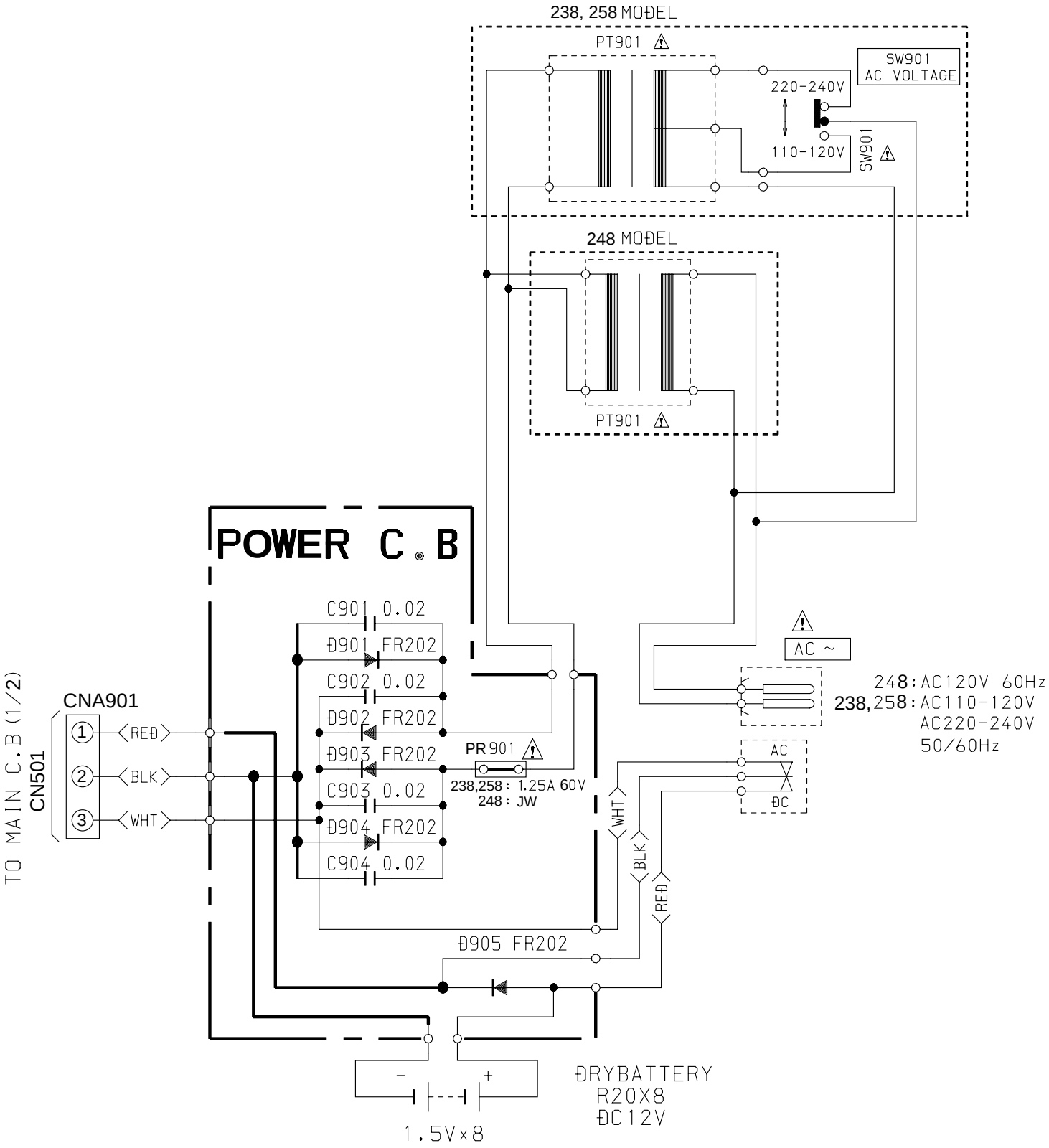


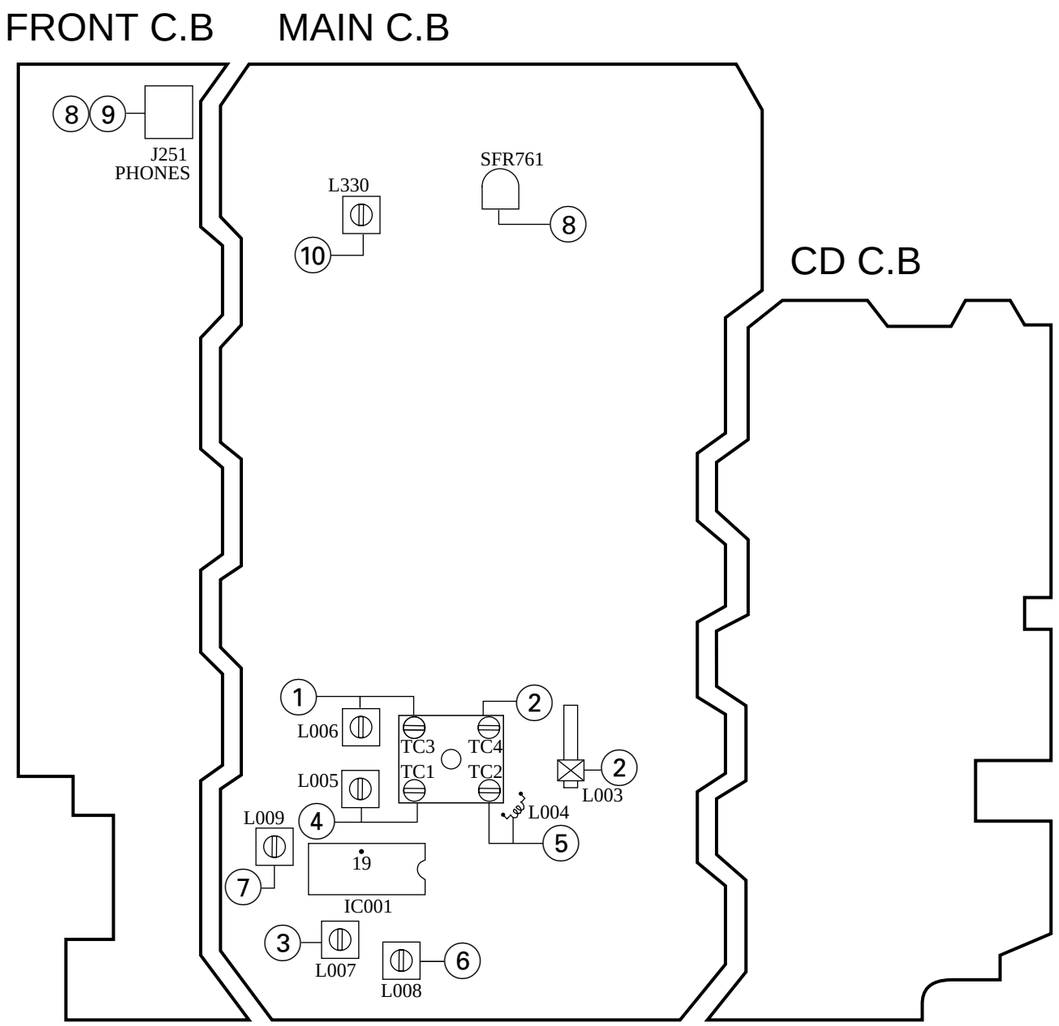
SCHEMATIC DIAGRAM-4/5 (FRONT)



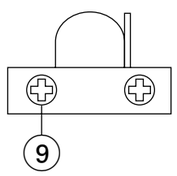

MOTOR C.B
M2
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
M3
(SPINDLE MOTOR)
TO CD C.B
CNA402
PIN3
SW1
M3
POWER C.B
TO MAIN C.B
CN501
CNA901
238, 258 MODEL
SW901
AC VOLTAGE
220-240
110-120V
PT901
AC110-120V
AC220-240V
50/60Hz
AC~
248 MODEL
PT901
AC 120V
60Hz
AC~
DRY BATTERY
DC 12V
R20 X8
PR901

SCHEMATIC DIAGRAM-5/5 (POWER)





RPH (DECK1)/PH (DECK2)



< TUNER SECTION >

1. AM Freq. Range Adjustment
   L006 ..... 517kHz
   TC003 ..... 1750kHz

2. AM Tracking Adjustment
   L003 ..... 600kHz
   TC004 ..... 1400kHz

3. AM IF Adjustment
   Settings: • Test point: IC001 (L1828) 19PIN
   • Adjustment location: L007
   Method: Adjust L007 so that the output level at 1000kHz becomes maximum.

4. FM Freq. Range Adjustment
   L005 ..... 87.0MHz
   TC001 ..... 109.0MHz

5. FM Tracking Adjustment
   L004 ..... 90.0MHz
   TC002 ..... 108.0MHz

6. FM IF Adjustment
   Settings: • Test point: IC001 (L1828) 19PIN
   • Adjustment location: L008
   Method: Adjust L008 so that the output level at 98.0MHz becomes balanced.

7. FM Balance Adjustment
   Settings: • Test point: IC001 (L1828) 19PIN
   • Adjustment location: L009
   Method: Adjust L009 so that the output level at 98.0MHz becomes balanced.

< TAPE SECTION >

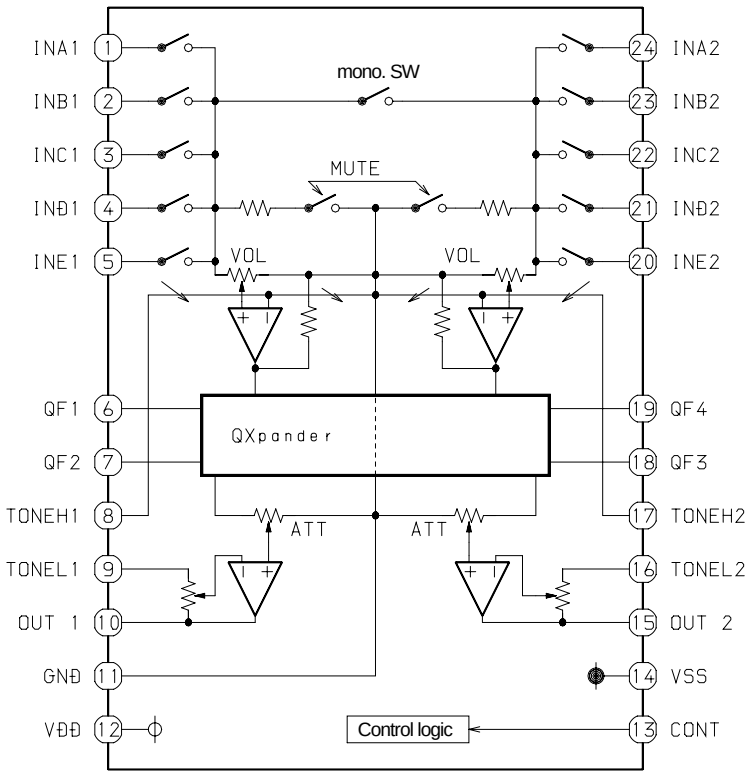
8. Tape speed Adjustment
   Settings: • Test tape: TTA-100
   • Test point: J251 (PHONES jack)
   • Adjustment location: SFR761
   Method: Play back the test tape and adjust SFR761 so that the frequency counter reads 3000Hz ±5Hz.

9. Head Azimuth Adjustment
   Settings: • Test tape: TTA-320
   • Test point: J251 (PHONES jack)
   • Adjustment location: Azimuth adjustment screw.
   Method: Play back the 8kHz signal of the test tape and adjust screw so that the output becomes maximum.

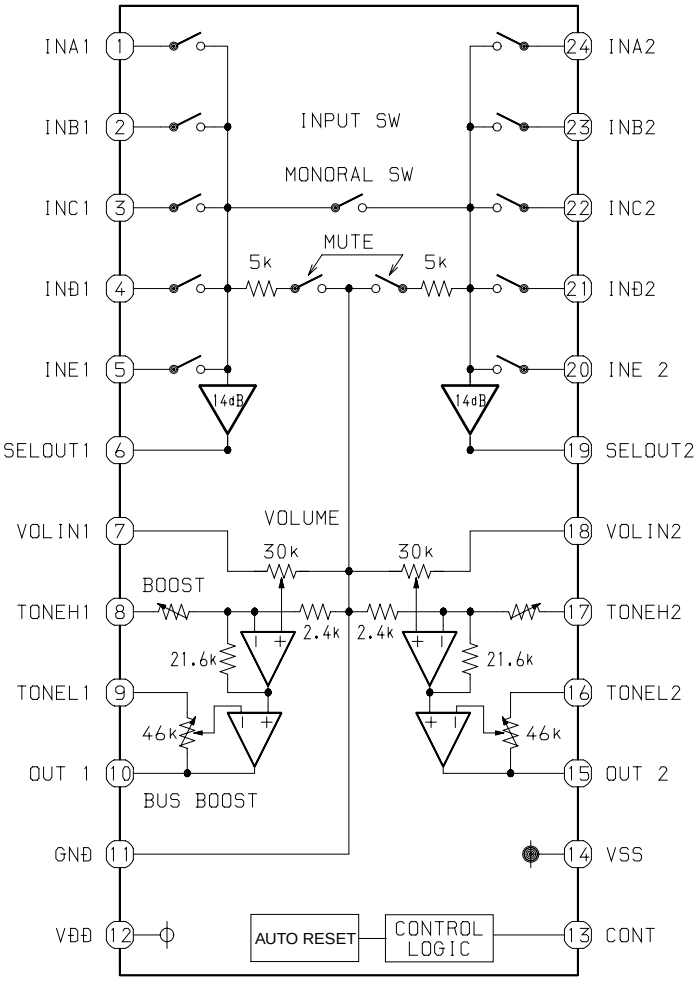
10. Bias frequency Adjustment
    L330 ..... 56kHz ±2kHz

IC BLOCK DIAGRAM-1/2

IC, M61509

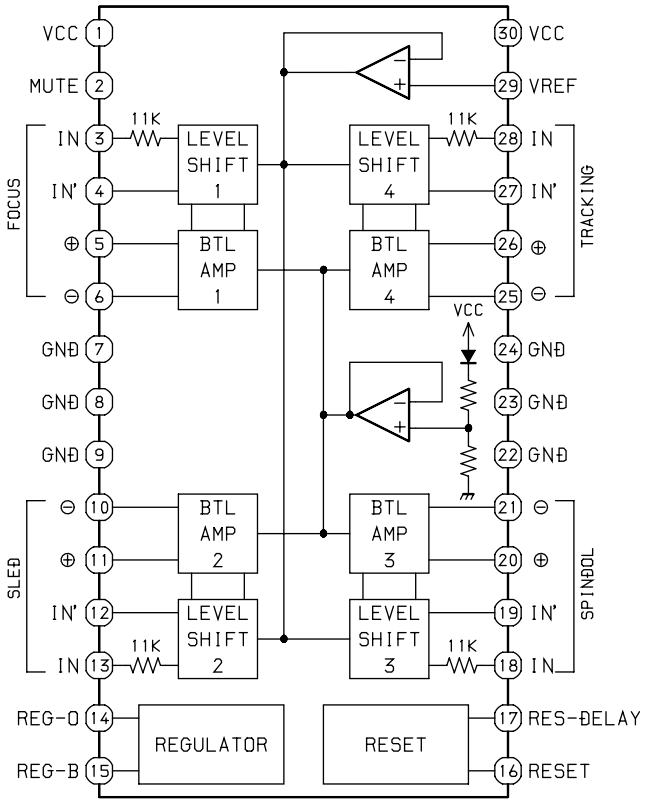


IC, M62495AFP

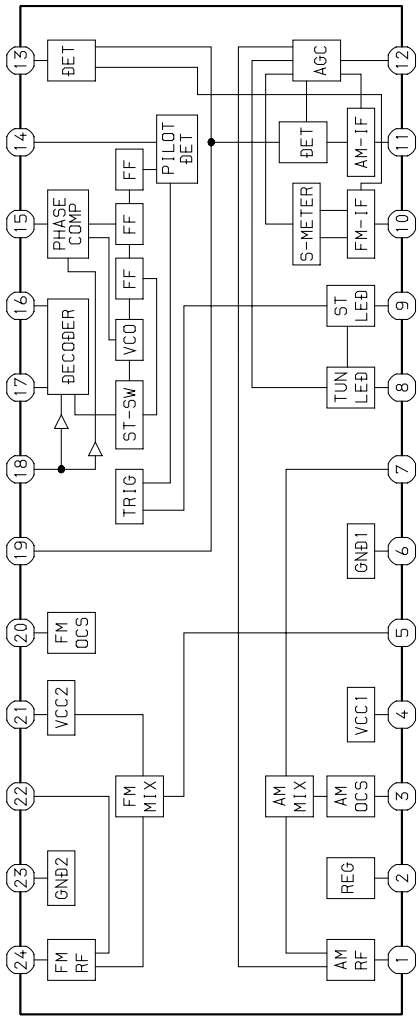


IC BLOCK DIAGRAM-2/2

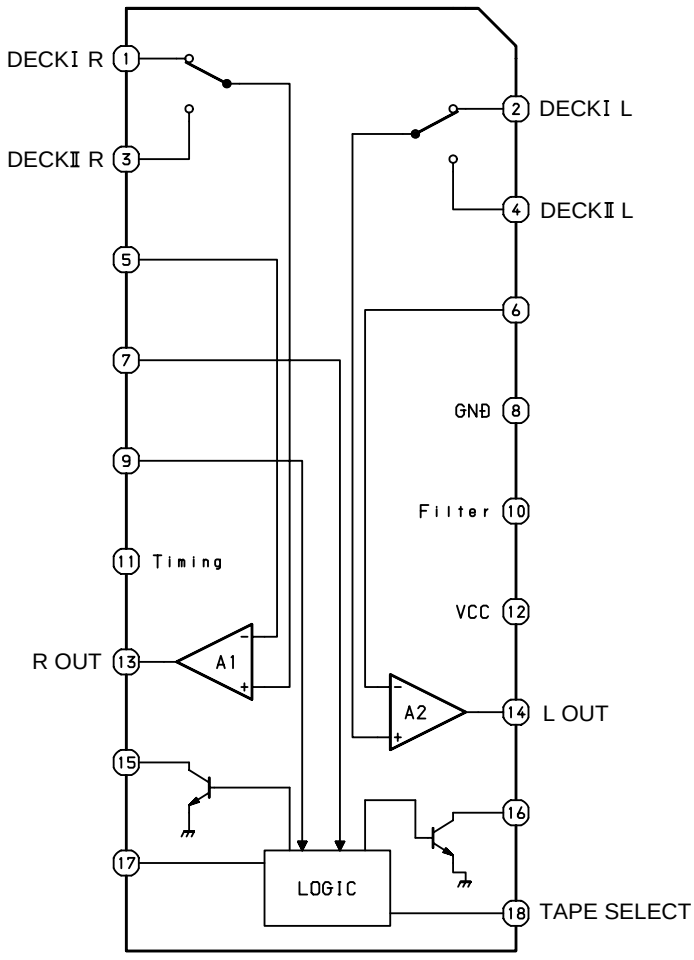
IC, LA6541D



IC, LA1828



IC, BA3416BL



IC601(LC865516A - 5T71)																																					
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
VOLT	—	—	—	4.6	4.6	1.3	0	2.5	0	2.1	2.4	4.8	5.0	5.0	—	0	0	0	0	4.6	4.6	4.6	0	0	5.0	4.3	4.8	4.6	0	0	0	0.2	4.6	0.7	0	0.8	0	0	4.6	4.6
PIN NO	41	42	43	44	45	46	47	48																															
VOLT	4.6	—	—	—	—	—	—	0																															

IC602 (RPM6938)	
1	4.79
2	0
3(B+)	5.0

248, 258 MODEL

IC203(M61509)																								
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
VOLT	2.02	2.02	2.02	0	2.02	2.02	2.02	1.83	2.02	2.02	2.02	4.5	2.67	0	2.02	2.02	1.83	2.02	2.02	2.02	1.06	2.02	2.02	2.02

238 MODEL

IC203(M62495)																								
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
VOLT	2.02	2.02	2.02	0	2.02	2.02	2.02	1.83	2.02	2.02	2.02	4.5	2.67	0	2.02	2.02	1.83	2.02	2.02	2.02	1.06	2.02	2.02	2.02

IC401(LA9241ML)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
VOLT	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	0	2.2	2.2	0	2.2	2.2	2.2	2.2	2.0	2.0	0
PIN NO	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
VOLT	0	4.4	4.4	0	0	4.4	0	0	1.4	2.1	2.3	2.2	0	2.2	2.2	0	0	2.2	3.9	3.9	0	0	1.0	4.4	2.2	2.2	0.8	0.8	2.0	4.4	0	5.0

IC402(LC78622NE)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
VOLT	0	0	0	0	1.6	4.4	0	0	2.2	2.3	0	0	0	4.4	0	0	4.3	4.4	0	0	0	0	4.4	0	0	0	0	0	0	0	0	0
PIN NO	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
VOLT	0	0	0	5.0	2.2	0	0	2.2	5.0	0	4.3	1.8	1.9	0	0	0	0	0	0	0	0	0	0	3.9	3.9	4.3	0	0	2.1	0	0	0

IC404(LA6541D)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
VOLT	8.0	5.0	2.6	2.5	3.5	3.2	0	0	0	3.2	3.5	2.5	0	5.0	2.0	5.0	5.0	0	2.5	3.8	3.0	0	0	0	3.4	3.4	0	2.5	2.5	8.0

IC301(BA3416BL)																	
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
VOLT	0	0	0	0	0.6	0.6	5.5	0	5.5	5.1	0.6	5.1	2.1	5.5	0	0	0	0.1

IC302(BA15218N)								
PIN NO	1	2	3	4	5	6	7	8
VOLT	5.6	5.6	5.5	0	5.5	5.6	5.6	11.8

IC202(LA4600)										
PIN NO	1	2	3	4	5	6	7	8	9	10
VOLT	6.0	0	6.0	12.0	6.1	1.7	9.1	1.4	0	1.4

LOC NO.		Q491	Q492	Q311	Q306	Q770	Q772	Q761	Q762
VOLT	E	7.83	0	0	0	11.3	0	10.96	0
	C	7.0	0.17	0.08	0.13	11.4	0.75	10.87	0.07
	B	7.8	4.27	0	0.16	10.7	0	10.36	2.38

LOC NO.		Q521	Q501	Q502	Q503	Q504	Q505	Q510	Q243	Q249
VOLT	E	0	12.08	11.50	0	11.8	7.12	5.28	0	0
	C	0	11.45	11.45	0.03	7.85	10.82	9.6	0	0
	B	0.73	11.50	10.5	2.93	11.06	7.72	6.02	0.15	0.15

LOC NO.		Q602	Q603	Q604	Q606	Q607	Q608	Q610	Q646	Q820	Q821	Q822	Q823	Q824
VOLT	E	0	0	0	0	0	0	7.81	0	0	0.1	0.1	5.71	0
	C	6.45	4.39	6.3	6.49	6.47	6.47	7.77	0	0	2.37	2.42	7.85	0.02
	B	0.08	0	0.18	0.1	0.1	0	6.98	8.0	0.01	0.7	0.73	6.21	2.39

LOC NO.		Q401	Q402	Q403	Q404	Q407	Q408
VOLT	E	5.0	7.81	2.55	0	2.55	2.55
	C	1.51	5.15	2.55	0.07	0.01	0.01
	B	4.35	7.09	4.85	4.85	0.07	0.07

IC101(**LA1828**)																							
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
VOLT	1.2	1.2	4.7	4.7	4.7	0	4.7	0	0	1.2	1.2	0.4	4.7	4.0	4.0	1.2	1.2	1.2	1.3	4.6	4.6	4.6	0	0.9

LOC NO.		Q0.01	Q0.02	Q0.03	Q0.04
VOLT	E	2.07	4.75	4.77	0
	C	4.05	7.85	5.45	0.01
	B	2.8	5.45	4.7	4.17

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE-	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES “Track Error Sense” comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD-	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD-	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA-	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE-	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	SP	O	Signal ended output of the CV+and CV- pin input signal.
24	SPI	I	Spndle amp input.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected. (Not connected)
26	SP-	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL-, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP-, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	“High Frequency Level” is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV-, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS-	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	“Slice Level Control” is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	“Tracking Balance Control” EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	“Detect RF” RF level detector output.
55	FSS	I	“Focus Search Select” focus search mode (± search/+ search) select pin. (Not connected)
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected. (Pull down)
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin. (Pull down)
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected. (Pull up)
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected. (Pull down)
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISET	I		Pin to which external resistor adjusting the PD0 output current. (Pull down)
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment. (Pull down)
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLV-	O	Disc motor control output. Three level output is possible using command.	
14	V/$\overline{P}$	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP-	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in. (Not connected)	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and thesync signal which is internally generated agree. (Not connected)	
23	VDD	—	Digital system power supply pin.	
24	SL+	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
25	SL-	I/O		
26	PUSW	I/O		
27	PUIN	I/O		
28	RW	I/O		
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H. (Not connected)	
30	C2F	O	C2 flag output pin. (Not connected)	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format) (Not connected)	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V. (Connected to GND)	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin. (Not connected)
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V. (Connected to GND)
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V. (Connected to GND)
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.

Pin No.	Pin Name	I/O	Description
42	MUTER	O	R-channel 1-bit DAC. R-channel mute output pin. (Not connected)
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin. (Not connected)
48	EFLG	O	C1, C2, single and dual correction monitoring pin. (Not connected)
49	PW	O	Subcode P, Q, R, S, T, U and W output pin. (Not connected)
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby. (Not connected)
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use) (Connected to GND)
52	FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator. (Not connected)
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read input clock from SQOUT pin
58	RES	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output). (Not connected)
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V. (Connected to GND)
63	$\overline{\text{CS}}$	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling. (Connected to GND)
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V. (Connected to GND)

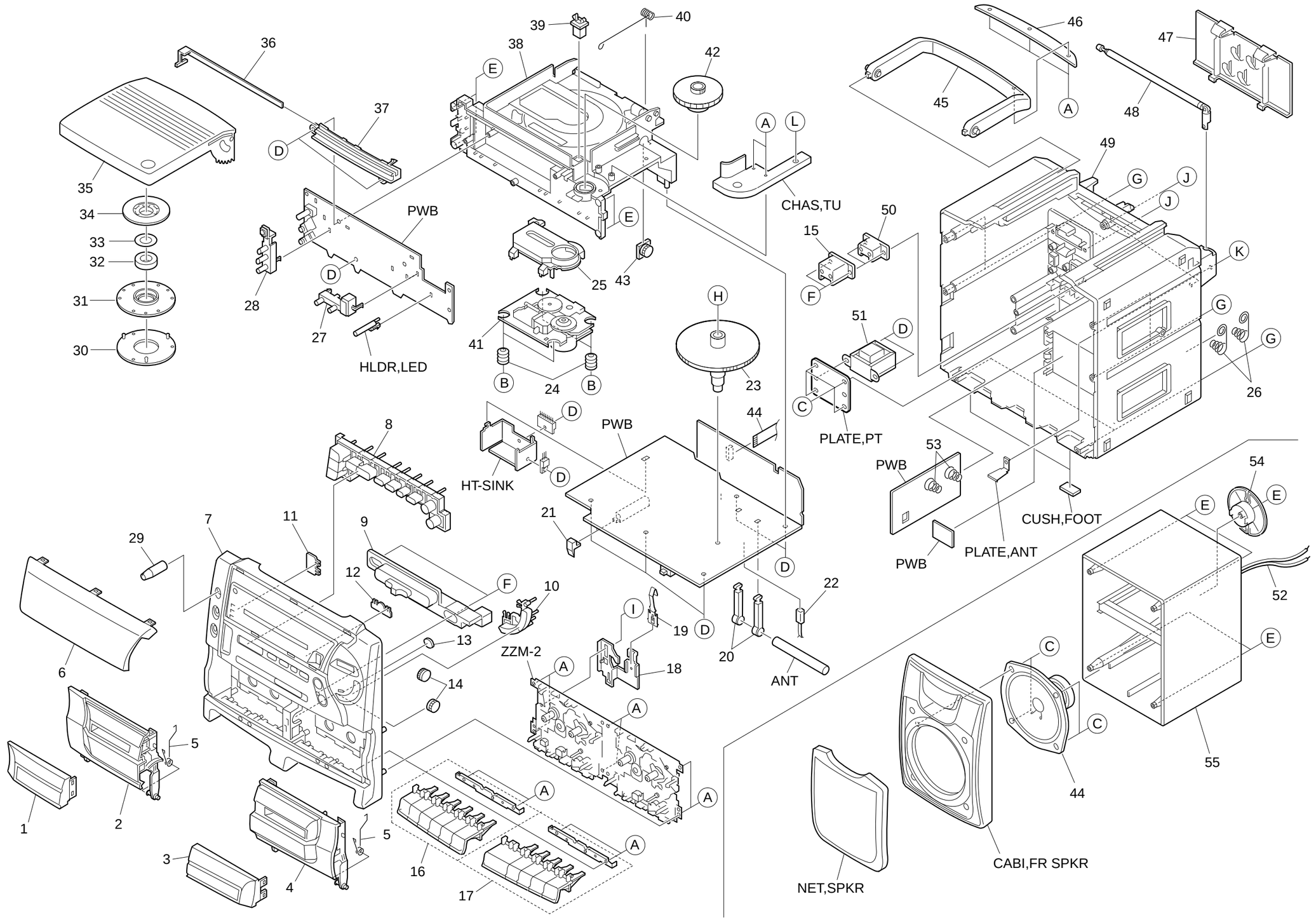
Note: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

IC DESCRIPTION-3/3 (LC865516A-5T71)-1/2

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{SEG E}}$	O	SEG E control.
2	$\overline{\text{SEG F}}$	O	SEG F control.
3	$\overline{\text{SEG G}}$	O	SEG G control.
4	I-W. DECK	—	W. DECK control. (Pull up)
5	I-RES	I	Micro processor reset input. (Pull down)
6	XT1 (IN)	I	Connected to an external 32.768 kHz crystal oscillator.
7	NC	—	Not connected.
8	XT2 (OUT)	O	Connected to an external 32.768 kHz crystal oscillator.
9	VSS	—	GND.
10	CF1 (IN)	I	Connected to an external 5.76 MHz ceramic filter.
11	CF2 (OUT)	O	Connected to an external 5.76 MHz ceramic filter.
12	VDD	—	Microprocessor power supply (+5V).
13	I-KEY0	I	Key AD input. (AD)
14	I-KEY1	I	Key AD input. (AD)
15	I-MOTOR	I	Deck status input. (AD) (Pull up)
16	I-CD SW	I	CD door switch status input. (Pull up)
17	$\overline{\text{HI-DUBB}}$	O	HI-SPEED DUBBING control.
18	NC	—	Not connected.
19	O-BASS LED	O	BASS LED ON/OFF control output. (Not connected)
20	O-Q. SOUND LED	O	Q sound LED ON/OFF control output. (Not connected)
21	HI-DUBB LED	—	HI-SPEED DUBBING LED control.
22	I-DRF	I	CD RF level detection input.
23	I-WRQ	I	CD subcode Q standby input.
24	NC	—	Not connected.
25	I-REM	—	Remote control input. (Pull up)
26	O-CD ON	O	CD power control output.
27	O-TU ON	O	TU power control output.
28	O-P.CONT	O	The main power supply control output.
29	NC	—	Not connected.
30	O-BEAT	O	Beat control.
31	O-MUTE	O	Main mute output.
32	O-DIGIT	O	7-segment LED power supply control output.
33	O-SEG RPEAT	O	REPEAT LED ON/OFF control output.
34	O-COIN	O	CD command output.
35	I-SQOUT	I	CD subcode Q input.
36	O-CQCK	O	CD command/CLK for subcode.
37	O-RWC	O	CD read/write control output.
38	O-DATA	O	Data output to M62349FP.
39	O-CD LED	O	LED ON/OFF control output for the CD function.
40	O-TU LED	O	LED ON/OFF control output for the TU function.
41	O-TA LED	O	LED ON/OFF control output for the TA function. (Not connected)

Pin No.	Pin Name	I/O	Description
42	NC	—	Not connected.
43	$\overline{\text{SEG DP}}$	O	SEG DP control.
44	$\overline{\text{SEG A}}$	O	SEG A control.
45	$\overline{\text{SEG B}}$	O	SEG B control.
46	$\overline{\text{SEG C}}$	O	SEG C control.
47	$\overline{\text{SEG D}}$	O	SEG D control.
48	NC	—	Not connected.

MECHANICAL EXPLODED VIEW-1/1



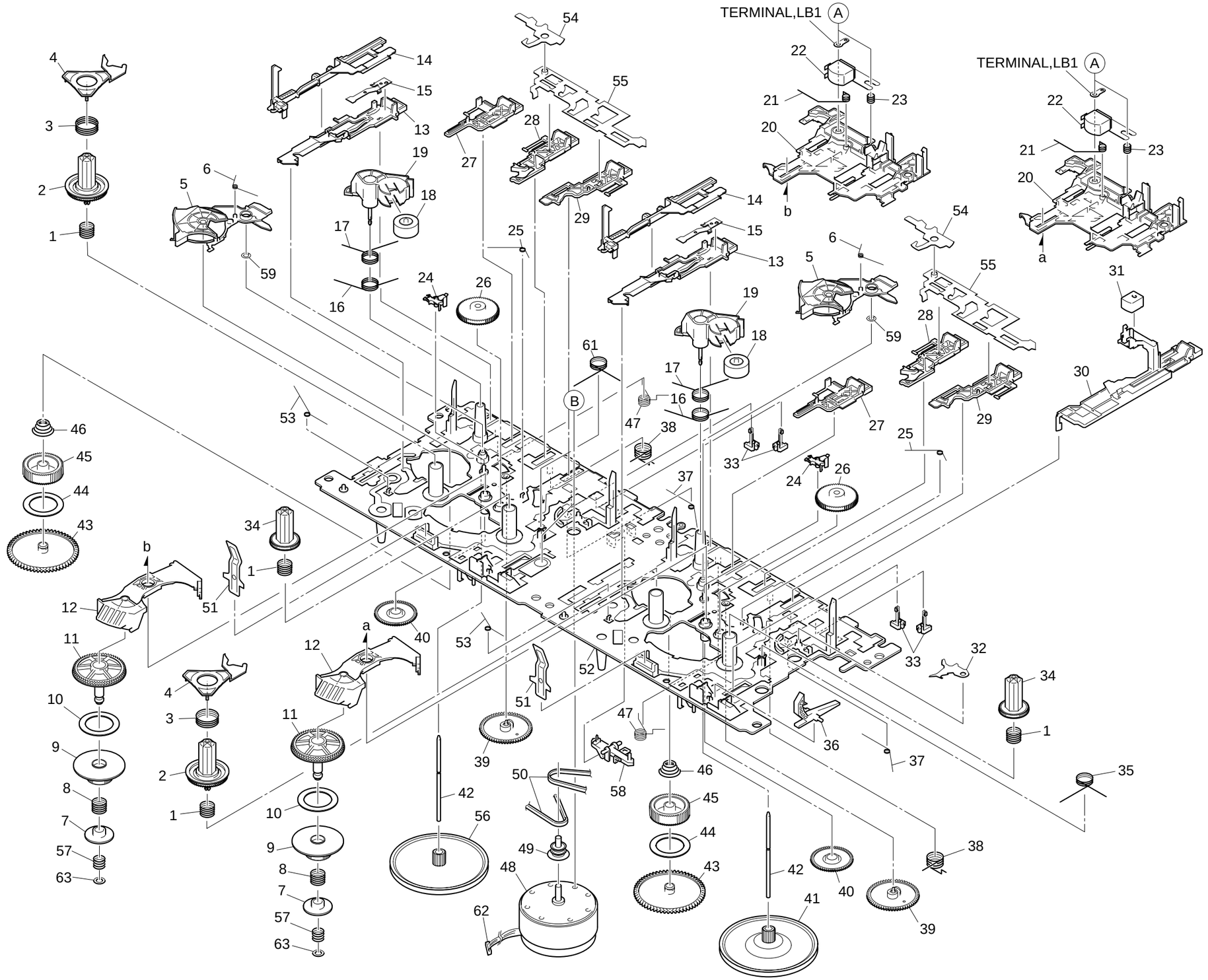
MECHANICAL PARTS LIST-1/1

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8B-CTA-007-010		WINDOW,CASS L
2	8B-CTA-004-010		BOX,CASS L
3	8B-CTA-008-010		WINDOW,CASS R
4	8B-CTA-005-010		BOX,CASS R
5	8B-CTA-206-010		SPR-T,CASS
6	8B-CTA-045-010		WINDOW,DISP LH<5LHSC>
6	8B-CTB-006-010		WINDOW,DISP LH L<3LHSC>
6	8B-CTA-006-010		WINDOW,DISP U<4USC>
7	8B-CTB-001-010		CABI,FR LH L<3LHSC>
7	8B-CTA-001-010		CABI,FR U<5LHSC,4USC>
8	8B-CTA-013-010		BTN,FUNC
9	8B-CTA-015-010		KNOB,SL BAND
10	8B-CTA-017-010		BTN,EQ
11	8B-CTA-018-010		LENS,FUNC
12	8B-CTA-019-010		LENS,REPEAT
13	8B-CTA-020-010		LENS,EQ<5LHSC,4USC>
14	87-063-165-010		OIL-DMPR 150
15	87-A90-086-010		COVER,AC-SOCKET
16	8B-CTA-011-010		KEY,CASS L
17	8B-CTA-012-010		KEY,CASS R
18	8B-CT5-208-010		SPR-P,REC
19	8A-CT9-215-010		SPR-P,REC A
19	8B-CTA-207-010		SPR-P,REC B
20	88-CD6-661-010		HLDR,BAR ANT.
21	86-CT9-205-110		HLDR,REC
22	88-CT6-632-010		TERMINAL,ASSY MECHA 1P
23	8B-CTA-203-010		GEAR,TU
24	88-CH6-220-010		CUSHION,CD A
25	8Z-CT9-064-010		PANEL CD<5LHSC,4USC>
25	8B-CTA-031-010		PANEL,CD M<3LHSC>
26	86-CT9-212-010		SPR-C,BATT LINK
27	8B-CTA-202-010		HLDR,LED REPEAT
28	8B-CTA-201-010		HLDR,LED FUNC
29	8B-CTA-014-010		KNOB,RTRY MIC
30	8Z-CT6-214-010		RING,CHUCK
31	8Z-CT6-213-010		BASE,CHUCK
32	87-036-368-010		MAGNET
33	86-CT9-222-010		PLATE,MAGNET
34	86-CT9-217-010		HLDR,CHUCK A(S)
35	8B-CTA-009-010		LID,CD
36	8B-CTA-021-010		POINTER,TU
37	8B-CTA-208-010		HLDR,POINTER
38	8B-CTA-010-010		CHAS,CD
39	87-036-389-010		SW,PUSH LOCK
40	8B-CTA-205-010		SPR-T,CD
41	M8-ZZK-E90-070		DA11T3C
42	8B-CTA-016-010		KNOB,RTRY TU
43	87-063-164-010		OIL-DMPR 80
44	8Z-CT6-647-010		SPKR,12 3.2OHM<5LHSC>
44	8Z-CT9-631-010		SPKR,12 7.0OHM<4USC>
44	8B-CTA-615-010		SPKR,5' 3.2OHM 5W<3LHSC>
45	8B-CTA-022-010		HANDL,ARM
46	8B-CTA-023-010		HANDL,GRIP
47	8B-CTA-003-010		LID,BATT
48	87-A92-048-010		ANT,ROD 5SEC
49	8B-CTB-004-010		CABI,REAR LH<3LHSC>
49	8B-CTA-036-010		CABI,REAR LH<5LHSC>
49	8B-CTA-002-010		CABI,REAR U (7 OHM N)<4USC>
⚠ 50	87-A60-178-010		JACK,AC E W/SW<5LHSC,3LHSC>
⚠ 50	87-A60-177-010		JACK,AC U W/SW<4USC>
⚠ 51	88-CT6-631-010		POWER TRANS,EI-57/25<5LHSC,3LHSC>
⚠ 51	88-CT7-629-010		PT,U<4USC>
52	8Z-CT6-646-010		CORD ASSY,SPEAKER
53	86-CT9-213-010		SPR-C,BATT(-)
54	8B-CTA-029-010		HLDR,CORD SPKR
55	8B-CTA-025-010		CABI,REAR SPKR L
55	8B-CTA-026-010		CABI,REAR SPKR R
A	87-751-097-410		SCREW 3X12
B	81-CD5-204-010		SCREW CD
C	87-751-095-410		VT2+3-8 W/O
D	87-571-095-410		VIT+3-8
E	87-651-100-410		VT1+3-16
F	87-651-075-210		VT1+2.6-10
G	87-651-104-410		VT1+3-30
H	87-261-072-410		V+2.6-5<3LHSC>
J	87-721-097-410		QT2+3-12 GLD
I	8A-CDA-222-010		S-SCREW,CASS+2.6-4
K	87-265-097-410		V+3-12 NI
L	87-751-096-410		VT2+3-10 GLD

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green		

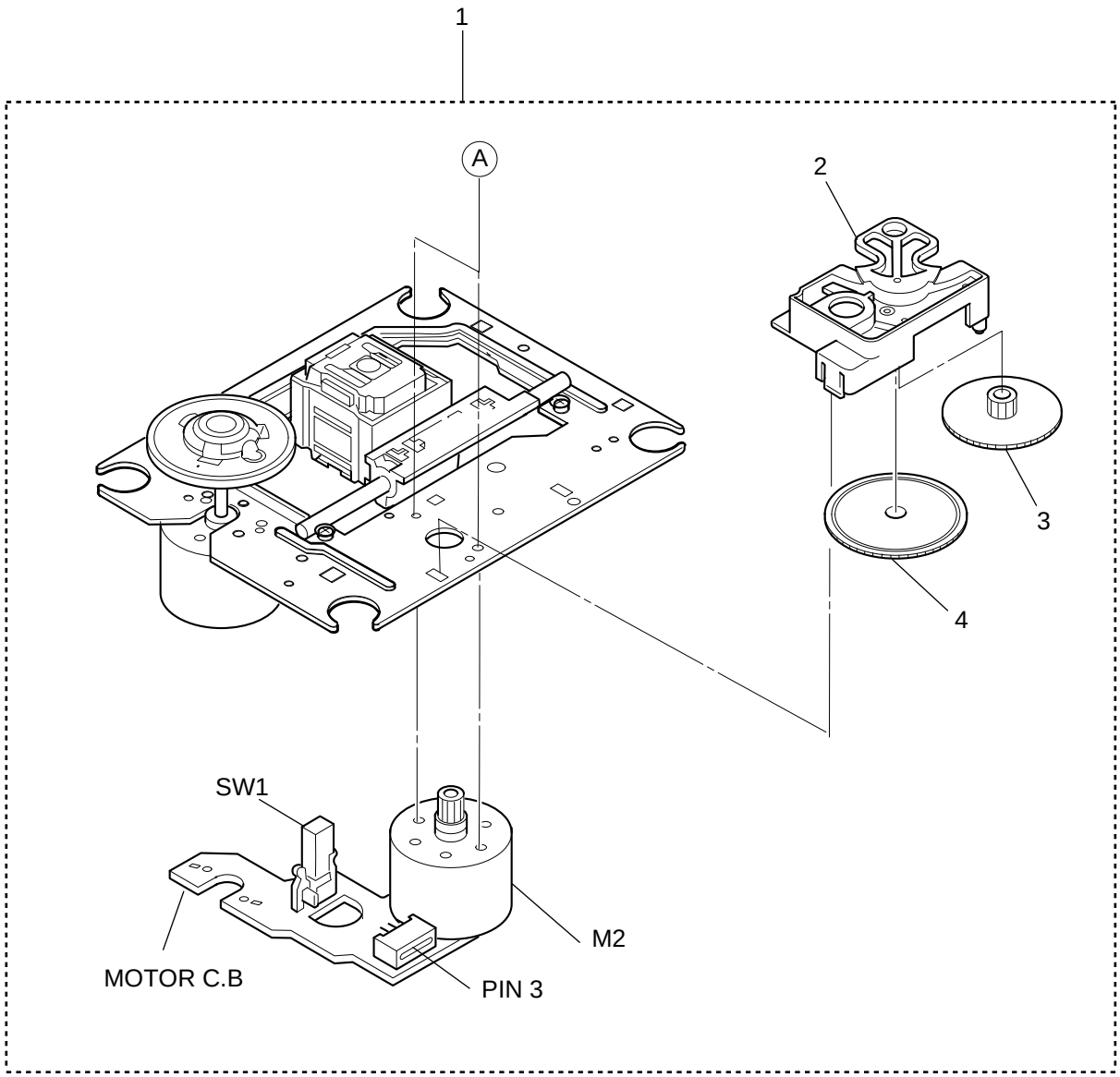
TAPE MECHANISM EXPLODED VIEW-1/1 (ZZM-2 APR3NC)



TAPE MECHANISM PARTS LIST-1/1 (ZZM-2 APR3NC)

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-ZM1-254-310		SPR-C,REEL R
2	8Z-ZM1-225-110		GEAR,REEL R
3	8Z-ZM1-253-210		SPR-C,AUTO SENSOR
4	8Z-ZM1-217-110		LEVER,AUTO SENSOR
5	8Z-ZM1-212-210		LEVER,T-UP
6	8Z-ZM1-245-310		SPR-T,AUTO
7	8Z-ZM1-236-010		CLR,SLIP FF/REW
8	8Z-ZM1-252-110		SPR-C,FF/REW
9	8Z-ZM2-213-010		GEAR,SLIP FR A ZZM-2
10	8Z-ZM1-269-010		FELT,FF/REW 2
11	8Z-ZM1-238-110		GEAR,SLIP FF/REW B 2
12	8Z-ZM1-237-110		LEVER,FF/REW 2
13	8Z-ZM1-209-510		LEVER,PAUSE
14	8Z-ZM1-218-210		LEVER,E-LOCK H
15	8Z-ZM1-256-010		SPR-P,PAUSE
16	8Z-ZM1-244-110		SPR-T,T-UP
17	8Z-ZM1-247-310		SPR-T,PINCH
18	8Z-ZM1-261-110		ROLLER ASSY,PINCH
19	8Z-ZM1-221-210		LEVER,PINCH
20	8Z-ZM1-205-310		LEVER,PLAY
21	8Z-ZM1-248-210		SPR-T,BRG
22	87-A90-403-110		HEAD,RPH MS15R
23	84-ZM2-227-310		SPR-C,AZIMUTH
24	8Z-ZM1-216-110		LEVER,AUTO
25	8Z-ZM1-246-110		SPR-T,AUTO 2
26	8Z-ZM2-214-110		GEAR,IDL REW ZZM-2
27	8Z-ZM2-212-010		LEVER,STOP ZZM-2
28	8Z-ZM1-207-010		LEVER,FF
29	8Z-ZM1-206-010		LEVER,REW
30	8Z-ZM1-210-010		LEVER,REC<YR1NF>
30	8Z-ZM1-211-210		LEVER,REC 2<YR2NF,YR3NF>
31	87-A90-404-010		HEAD,EH LE15B<YR1NF>
31	87-A91-533-010		HEAD,EH PH-K380<YR2NF,YR3NF>
32	8Z-ZM2-218-010		LEVER,REC LOCK ZZM-2
33	87-A91-492-010		SW,LEAF MSW18560
34	8Z-ZM1-226-010		GEAR,REEL L
35	8Z-ZM1-241-210		SPR-T,PLAY
36	8Z-ZM1-220-110		LEVER,REC SENSOR
37	8Z-ZM1-249-210		SPR-T,FR
38	8Z-ZM1-242-310		SPR-T,FF/REW
39	8Z-ZM3-244-110		GEAR,CAM TD20
40	8Z-ZM1-232-010		GEAR,IDL FF/REW
41	8Z-ZM3-228-110		FLY-WHL,M3
42	8Z-ZM1-267-110		SHAFT,CAPSTAN 2
43	8Z-ZM1-228-010		GEAR,SLIP T-UP B
44	8Z-ZM1-265-010		FELT,T-UP
45	8Z-ZM1-227-010		GEAR,SLIP T-UP A
46	8Z-ZM1-251-210		SPR-C,T-UP SLIP
47	8Z-ZM1-243-310		SPR-T,STOP/PAUSE
48	87-A91-532-010		MOT,MS15U2LW1A
49	8Z-ZM1-235-010		PULLEY,MOT
50	8Z-ZM2-216-010		BELT,MAIN M
51	8Z-ZM1-260-010		SPR-P,CASETTE
52	8Z-ZM2-201-510		CHAS ASSY,ZZM-2
53	8Z-ZM1-255-310		SPR-T,E-LOCK
54	8Z-ZM2-219-010		LEVER,E-OPEN ZZM-2
55	8Z-ZM1-214-310		LEVER,LOCK
56	8Z-ZM2-211-210		FLY-WHL,ZZM-2
57	8Z-ZM1-257-110		SPR-C,F/R
58	8Z-ZM2-210-010		LEVER,BRIDGE<YR2NF,YR3NF>
59	87-B10-301-010		W-L,1.63-3.2-0.5 SLIT
60	87-A91-494-010		SW,LEAF MSW17820<YR1NF,YR2NF>
61	8Z-ZM1-241-010		SPR-T,PLAY<YR1NF>
61	8Z-ZM2-217-010		SPR-T,PLAY 2<YR2NF,YR3NF>
62	8Z-ZM2-601-010		CONN ASSY,9P ZZM-2<YR1NF>
63	8Z-ZM1-275-010		W-L,1.47-4-0.25<YR1NF>
A	84-ZM2-242-010		S-SCREW,AZ1-2-6.4
B	8Z-ZM2-220-110		V+2.6 ZZM-2

CD MECHANISM EXPLODED VIEW-1/1 (DA-11T3C)



CD MECHANISM PARTS LIST-1/1 (DA-11T3C)

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	M8-ZZK-E90-070		DA11T3C
2	S2-121-A28-400		COVER GEAR
3	S2-511-A21-000		GEAR MIDDLE
4	S2-511-A21-100		GEAR,DRIVE
A	S1-PN2-03R-OSE		SCR PAN PCS 2-3

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